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Ontario Geological Survey
Open File Report 6130

Report of Activities, 2003 Resident Geologist Program

Timmins Regional Resident Geologist Report: Timmins and Sault Ste. Marie Districts

2004

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Ontario

ONTARIO GEOLOGICAL SURVEY

Open File Report 6130

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Resident Geologist Program

Timmins Regional Resident Geologist Report:
Timmins and Sault Ste. Marie Districts

by

B.T. Atkinson, M. Hailstone, G.Wm. Seim, A.C. Wilson, D.M. Draper, S. Butorac and G.R. Cooper

2004

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ONTARIO GEOLOGICAL SURVEY

RESIDENT GEOLOGIST PROGRAM

REPORT OF ACTIVITIES - 2003

TIMMINS REGIONAL RESIDENT GEOLOGIST REPORT

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Timmins Regional Resident Geologist (Timmins District)–2003

by

B.T. Atkinson, G.Wm. Seim, A.C. Wilson, D.M. Draper and G.R. Cooper

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Timmins Regional Resident Geologist (Timmins District)–2003

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INTRODUCTION

As a result of improving metal prices, exploration activities increased significantly through the year. By year-end, gold had increased to over $400US per ounce while nickel surpassed $7.00 per pound and copper increased to over $1.00 per pound. Combined, the surge in metal prices resulted in a marked increase in exploration activities for most metal commodities. The metal price increase was accompanied with encouraging news for mine production as Falconbridge Limited obtained approvals to bring the Montcalm nickel-copper deposit into production. De Beers Canada concluded a positive feasibility study on the Victor diamond project in the James Bay Lowlands and the Porcupine Joint Venture continued work to bring the Pamour gold mine on stream as an open pit operation.

A new nickel discovery in Bannockburn Township, south of Timmins in the Kirkland Lake district demonstrated the ability and success of junior exploration companies in discovering new mineral deposits in the Abitibi subprovince.

On the financial side, companies were again able to raise venture capital for new exploration projects as investors once again returned to mineral commodity investments.

Admiral Bay Resources Limited pioneered the search for coal bed methane in the Moose River basin of the James Bay Lowlands.

A plethora of new geoscience data was collected by the Discover Abitibi Initiative, a partnership between the Ontario provincial and federal governments, the municipal governments of Timmins, Black River-Matheson and Kirkland Lake and the mining sector.

A map of the Timmins District is presented in Figure 1 and the locations of mines, advanced exploration projects and exploration activities conducted over the year are presented in Figures 2 and 3. Table 1 presents claim staking activities and assessment work filed with the Provincial Recording Office over the last 9 years.

Exploration activities for the Sault Ste Marie District are described in a separate section of this report.

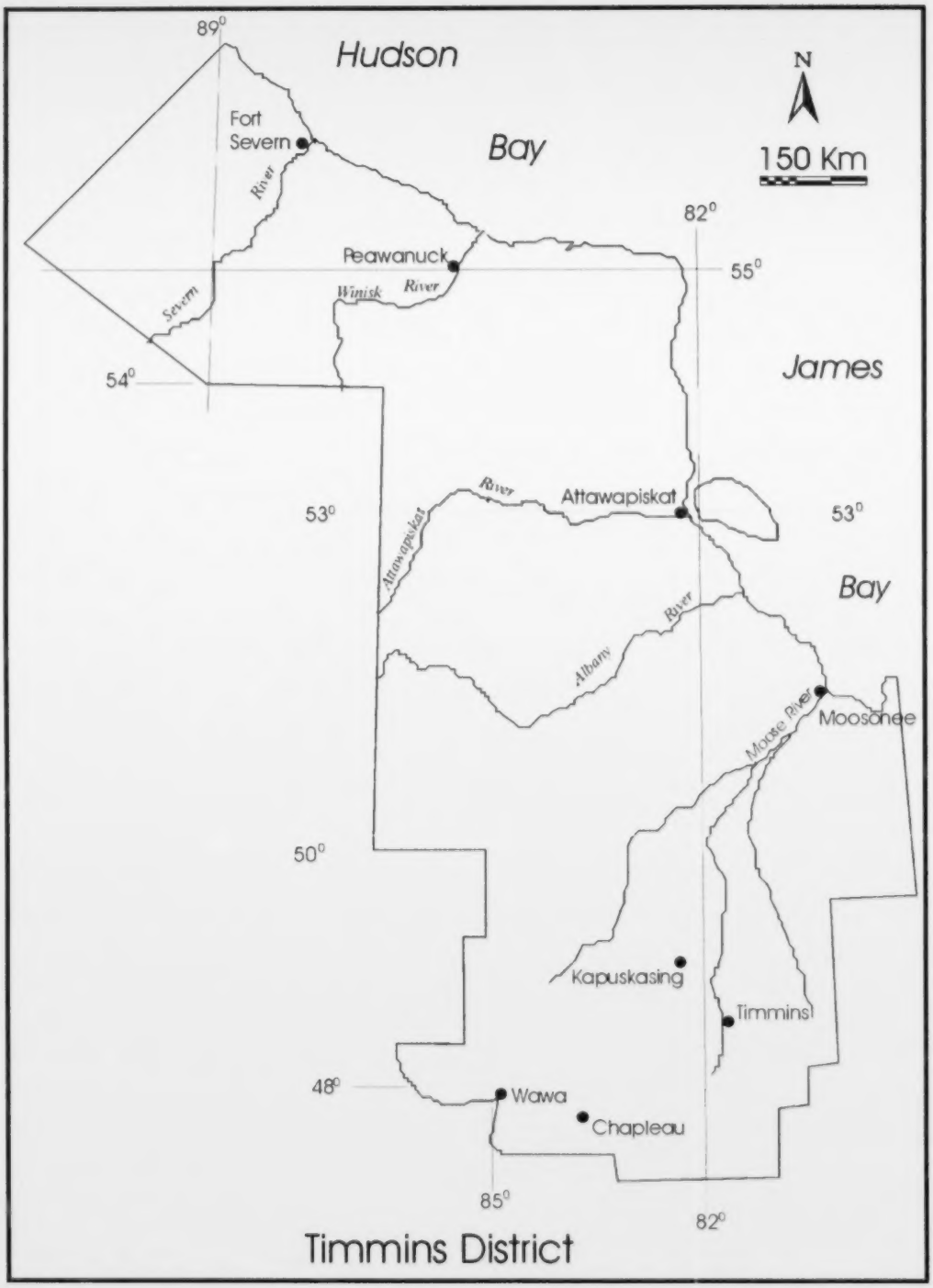

Figure 1. Timmins Regional Resident Geologist District.

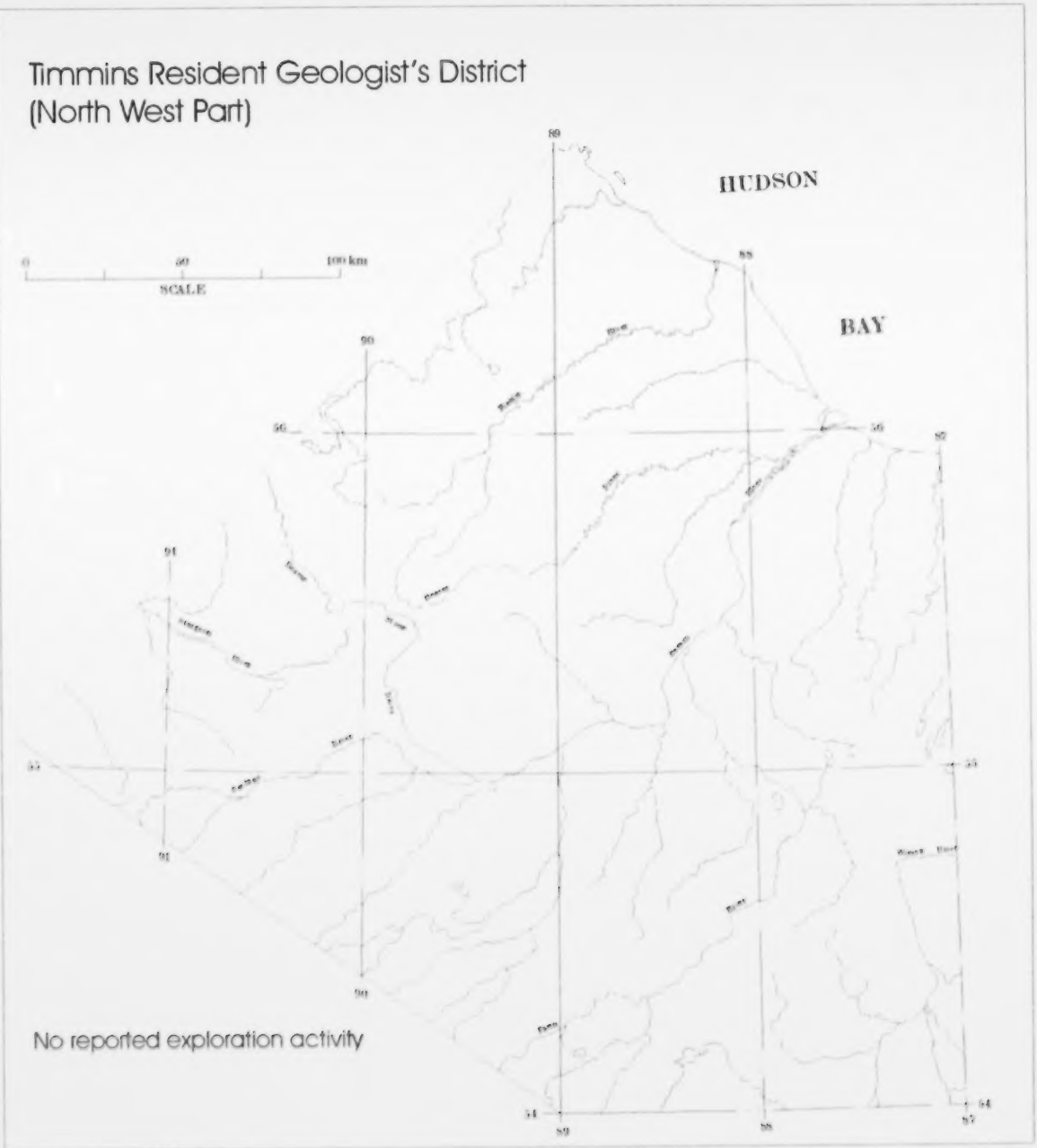

Figure 2a. Timmins Regional Resident Geologist District (North West Part).

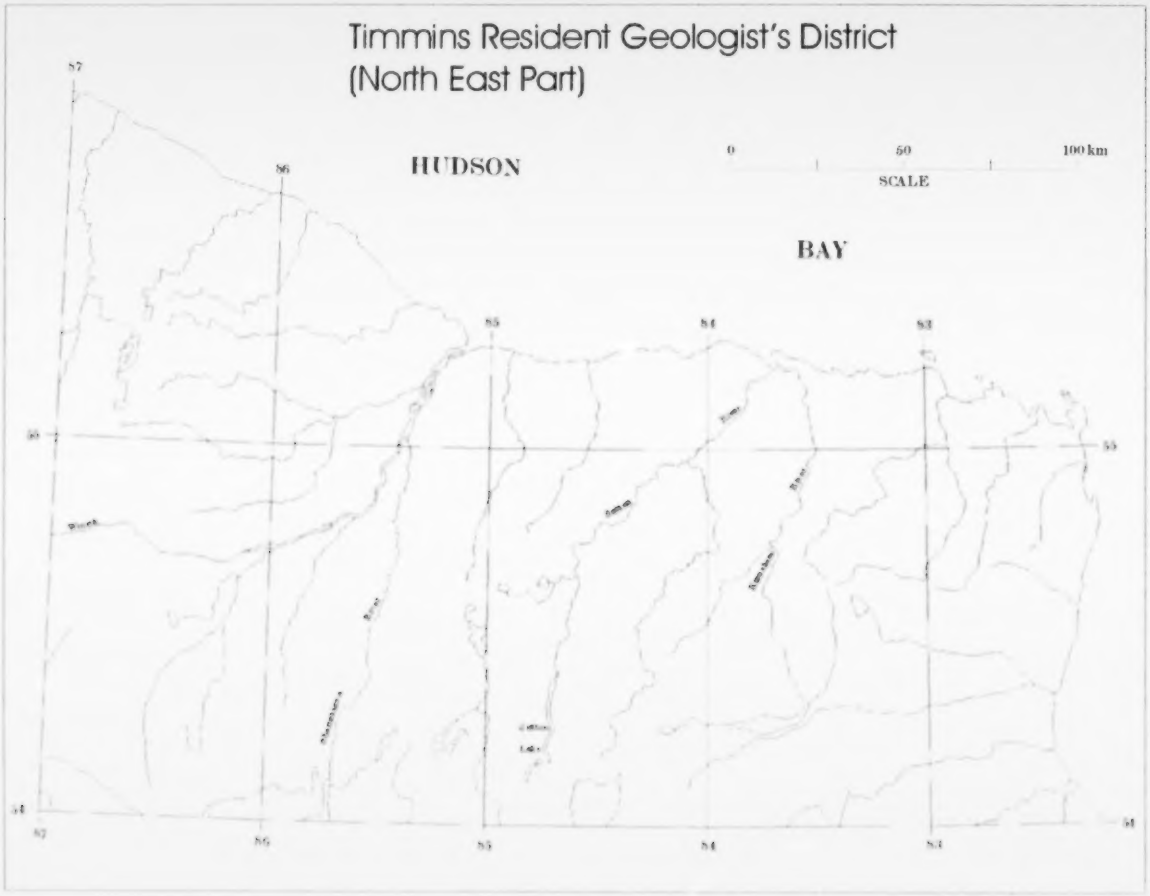

Figure 2b. Timmins Regional Resident Geologist District (North East Part).

Figure 2c. Timmins Regional Resident Geologist District (West Central Part). Exploration programs keyed to Table 8.

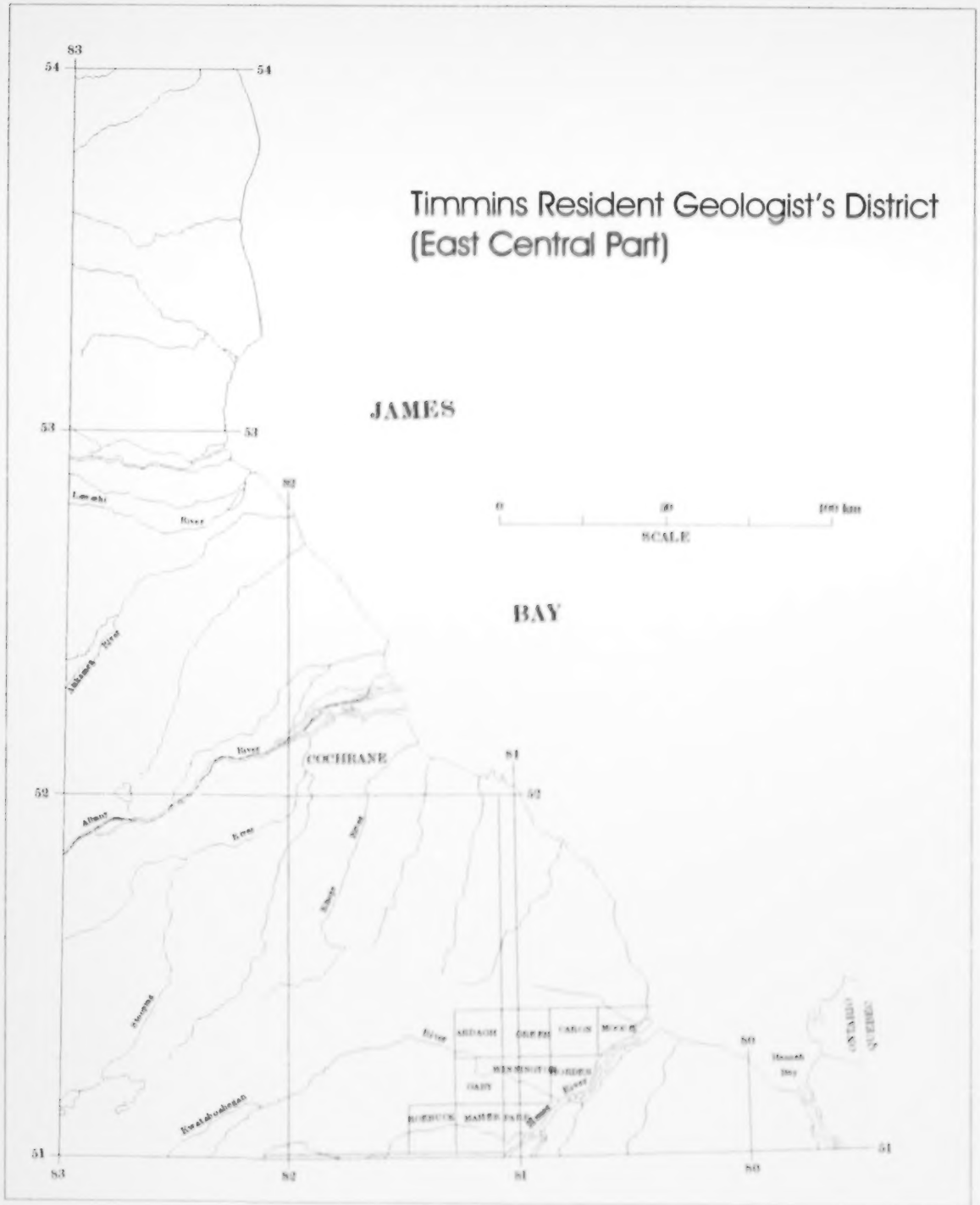

Figure 2d. Timmins Regional Resident Geologist District (East Central Part).

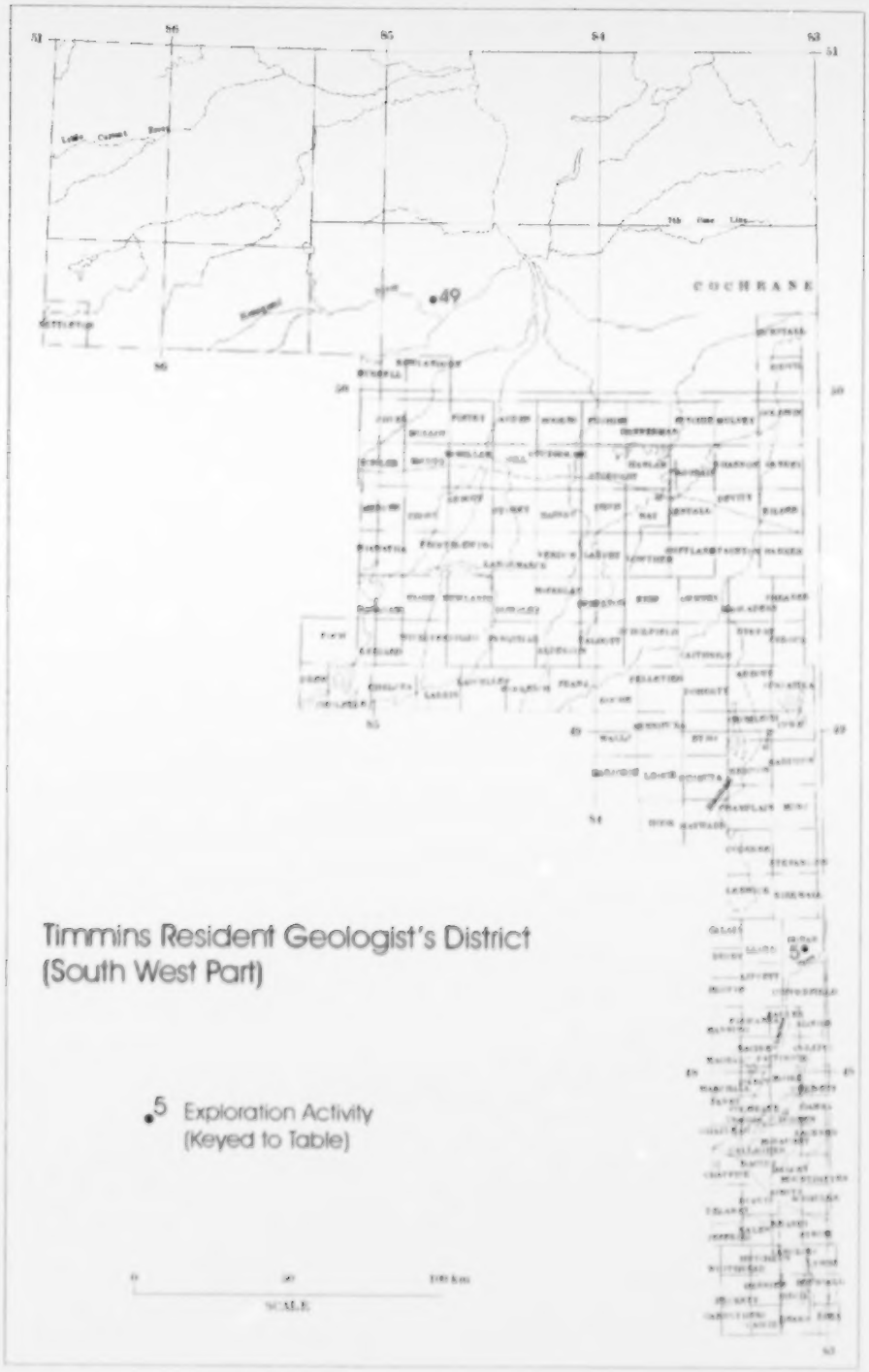

Figure 2e. Timmins Regional Resident Geologist District (South West Part). Exploration programs keyed to Table 8.

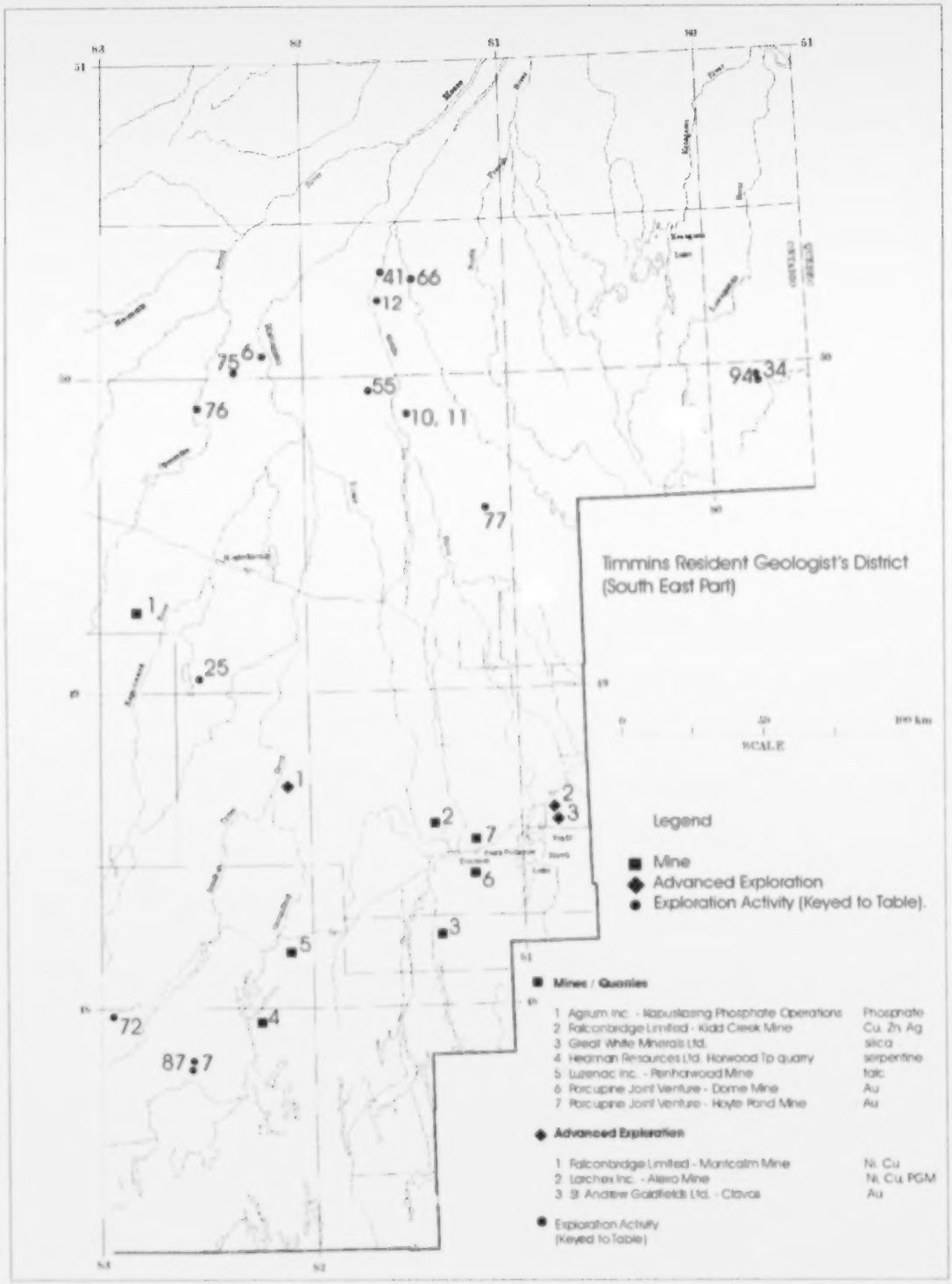
Timmins Resident Geologist's District
(South East Part)
SCALE
Legend
Mine
Advanced Exploration
Exploration Activity (Keyed to Table).
Mines / Quarries
1 Agrium Inc. - Kapuskasing Phosphate Operations Phosphate
2 Falconbridge Limited - Kidd Creek Mine Cu, Zn, Ag
3 Great White Minerals Ltd. silica
4 Heatman Resources Ltd. Horwood Tp quarry serpentine
5 Luzenac Inc. - Penhorwood Mine talc
6 Porcupine Joint Venture - Dome Mine Au
7 Porcupine Joint Venture - Hoyle Pond Mine Au
Advanced Exploration
1 Falconbridge Limited - Montcalm Mine Ni, Cu
2 Larchex Inc. - Alexo Mine Ni, Cu, PGM
3 St Andrew Goldfields Ltd. - Otavos Au
Exploration Activity
(Keyed to Table)

Figure 2f. Timmins Regional Resident Geologist District (South East Part). Exploration programs keyed to Table 8.

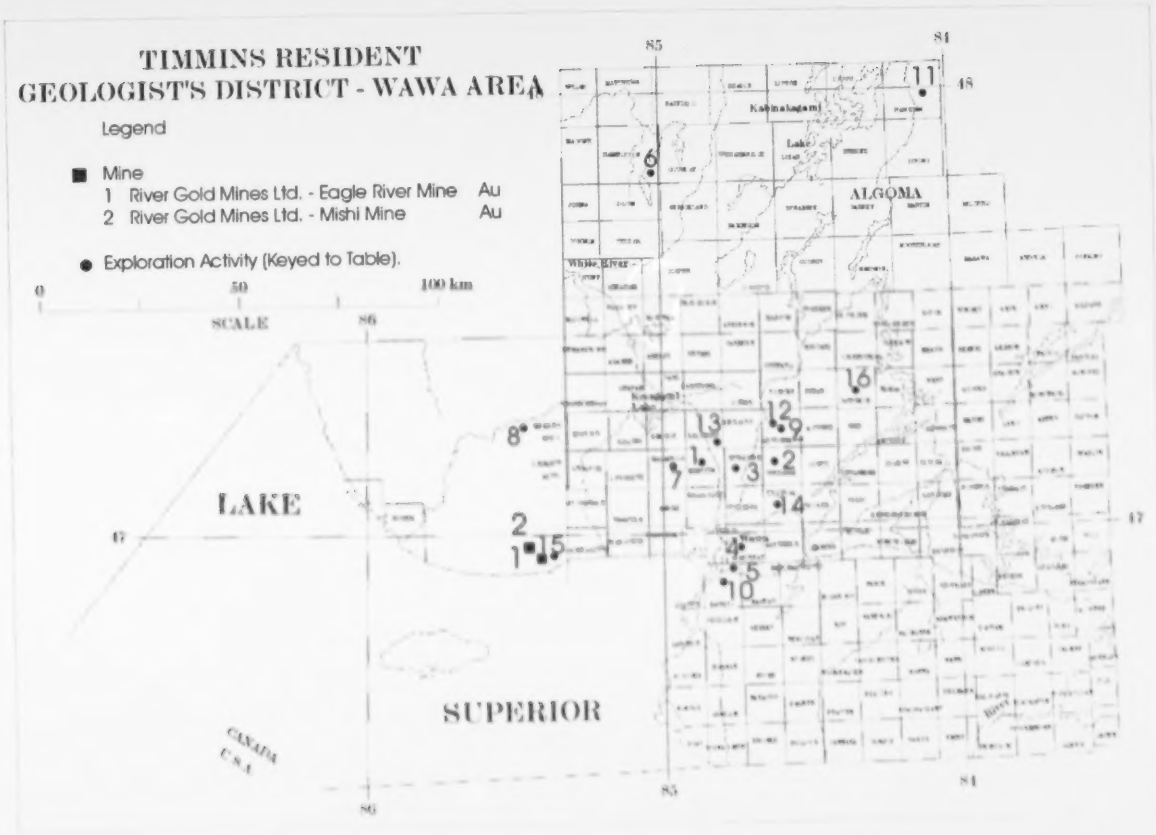

Figure 2g. Timmins Regional Resident Geologist District (Wawa area). Exploration programs keyed to Table 9.

Figure 3. Timmins Regional Resident Geologist District (Timmins Area). Exploration programs keyed to Table 8.

Table 1. Summary of claims recorded and assessment work credit in the Timmins District, 1995 – 2003.

Year	Claim Units Recorded	Claim Units Cancelled	Claim Units Active	Diamond Drilling ($)	Physical Work ($)	Geotechnical Work* ($)	Total ($)
2003	28 154	18 860	57 384	N/A	N/A	N/A	5 728 049
2002	11 423	14 705	39 964	N/A	N/A	N/A	5 419 054
2001	18 258	11 759	42 835	N/A	N/A	N/A	4 996 755
2000	11 035	15723	35 905	N/A	N/A	N/A	4 946 371
1999	12 312	16 557	42 270	N/A	N/A	N/A	10 665 577
1998	12 642	11 300	46 515	N/A	N/A	N/A	17 308 110
1997	10 771	16 908	45 173	N/A	N/A	N/A	10 707 864
1996	13 859	15 876	50 739	4 788 424	216 812	3 288 156	8 418 072
1995	14 376	7 769	60 705	2 003 632	202 191	2 742 497	5 052 359

** As of 1992, Geological and Geophysical Survey data are combined as Geotechnical Work*
N/A Not available, figures no longer reported separately as of 1997.

MINING ACTIVITY

The locations of the producing mines are indicated on Figures 2f and 2g and current mine production and reserves are indicated in Table 2. Historical gold production for Timmins and Wawa is presented in Tables 3 and 4, historical base metal production for Timmins is presented in Table 5. Current mine production from Timmins is tabulated in Table 5.

Base Metal Mining

FALCONBRIDGE LIMITED – KIDD CREEK MINE

Kidd Creek Mine production amounted to 2 124 579 tonnes of ore grading 2.3% copper, 4.27% zinc and 58 g/t silver. The daily milling rate was 6400 tonnes.

Ore reserves at year end are:

Category	Tonnes	Copper %	Zinc %	Silver g/t
Proven	12.6	1.86	5.60	71
Probable	8.2	2.23	7.08	53
Total	20.8	2.01	6.15	64

Mining operations included 2854 m of drifting and 1787 m of raising. Mining was active in 11 headings on 22 levels. Diamond drilling included 787 m of exploration drilling and 60 311 m for ore definition. Development on the Deep Mine, which extends from 6800 level to 10500 level, continued with shaft sinking completed to the 7500 level and ramping currently down to the 8200 level. Cementation Skanska is the mining contractor working on the Deep Mine.

The Kidd Creek Mine has a labour force of 423 and an additional 757 employees work at the Kidd metallurgical site. D. Gignac was replaced as Mine Manager by M. Boucher near year end and D. Duff is Manager of Geology.

Gold Mining

The Timmins operations of Placer Dome (CLA) Limited and Kinross Gold Corporation were merged in 2002 and are now part of the Porcupine Joint Venture (PJV). Placer Dome is the operator of the PJV and owns 51% while Kinross owns the remaining 49%. Both the Dome Mine and the Hoyle Pond Mine operated throughout the year. The Dome Mine derived ore from open pit and underground operations. The Hoyle Pond Mine operated as an underground mine with the ore being trucked to the Dome mill for gold recovery. Approximately 57 000 tonnes of gold ore was also mined in a small open pit from the Marhill pit. This was processed at the Dome mill.

PORCUPINE JOINT VENTURE – DOME MINE

Gold productions amounted to 338 815 ounces from 3 697 657 tonnes of ore milled. The ore grade was 2.85 g/t gold and the daily milling rate was 10 131 tonnes. The mill achieved a recovery of 92.9%.

Ore reserves at the end of 2002 were:

	Tonnes	Grade (g/t gold)	Ounces
Proven:	10 935 000	1.41	495 711
Probable:	10 736 000	2.00	690 341
Total	21 871 000	1.51	1 061 785

Mining operations included 1672 m of drifting and 15 m of raising. Underground mining used both longhole and cut and fill methods.

Diamond drilling for ore definition drilling on all PJV properties amounted to 28 502 m underground and 49 505 m of surface diamond drilling. Exploraion dimaond drilling, including both surface and underground amounted to 46 131 m.

Underground mining operations are scheduled to close in 2004 due to depletion of ore. The Dome Mine has been in continuous production since 1910. Mine permitting of the Pamour Mine is underway to return that mine to an open pit operation by 2004. The PJV operations employ 648 people. G. Halverson is the Mine Manager and A. Still is the Chief Geologist.

PORCUPINE JOINT VENTURE – HOYLE POND MINE

The Hoyle Pond Mine produced 147 721 ounces of gold during the year from 374 463 tonnes of gold ore milled. The grade was 12.27 g/t gold and the milling rate was 1026 tonnes per day. The mill recovery was 91.4%.

Ore reserves at the end of 2002 were:

	Tonnes	Grade (g/t gold)	Ounces
Proven:	328 000	13.00	137 090
Probable:	560 000	12.43	223 795
Total	888 000	12.64	360 885

Mining operations included mechanized cut and fill, longhole, shrink and panel methods. By year end, the ramp had been extended down to the 900 m level.

RIVER GOLD MINES LTD. – EAGLE RIVER MINE

The Eagle River mine is located on the north shore of Lake Superior, approximately 50 km west of the town of Wawa, in the Mishibishu Lake greenstone belt.

Gold production for the year amounted to 70 903 ounces from 235 000 tons of ore milled. The grade was 0.265 ounce per ton gold and the daily milling rate was 850 tons. The mill achieved a gold recovery of 97%.

Ore reserves for year end were unavailable at time of writing, but additions to reserves more than offset those mined during the year.

Ore reserves at the end of 2002 were:

	Tons	Grade (ounce per ton gold)	Ounces
Proven	631 200	0.251	158 431
Probable	914 600	0.236	215 846
Total	1.55 million	0.242	374 277

Mining operations included 3529 m of waste development and 1258 m of ore development mining. There were 56 active ore headings and 83 active waste headings in the underground mine operations. Ore extraction was by longhole and shrinkage stope mining.

Diamond drilling included 10 000 m of surface and 30 000 m underground drilling. Two new ore zones were discovered at the Eagle River Mine. The Magnacon Mine was dewatered and the company is drifting to the Mishi gold deposit on the 500 foot level of the Magnacon Mine (*see* "Advanced Exploration" section for details).

The work force at the mine consists of 181 employees plus 38 on site contractors. N. Lecuyer is the Mine Manager and J. Plecash is the Chief Geologist.

AGRIUM INC. – KAPUSKASING PHOSPHATE OPERATIONS

Agrium Inc.'s Kapuskasing Phosphate Operations, located 40 km southwest of Kapuskasing, operated throughout the year. Production of phosphate amounted to 979 500 tonnes from 1 760 000 tonnes of ore milled. The product grade was 36% P_2O_5.

Ore reserves at the end of 2003 were:

	Tonnes	Grade (P_2O_5)
Proven	19 550 000	
Probable	20 650 000	
Total	40 200 000	22.7%

During the year, ore definition drilling amounted to 10 491 m and exploration diamond drilling was 8840 m. New developments include installation of a bucket elevator and enclosure of the apron ore feeder in the mill.

The workforce includes 70 mine employees and 70 mill employees.

GREAT WHITE MINERALS LTD. – FRIPP SILICA QUARRY

Great White Minerals Ltd. continued to produce silica from the Fripp township quarry throughout the year.

LUZENAC INC. – PENHORWOOD MINE

Luzenac Inc. continued to operate the Penhorwood Mine in Penhorwood Township, and the concentrator in Timmins throughout the year. A total of 207 m of surface drilling was done to define the ore zone. The operations employ 23 people at the minesite and 22 people at the concentrator. K. Tyler is the Mine Manager and K. Kiedock is the Concentrator Manager.

ROSEVAL SILICA INC. – PENHORWOOD SILICA QUARRY

Roseval Silica Inc. operated the Roseval silica quarry on an intermittent basis throughout the year.

ADVANCED EXPLORATION

De Beers Canada Exploration Inc. - Victor Diamond Project

De Beers Canada Exploration Inc. continued geological investigations at the Victor project, located 90 km west of Attawapiskat througout the year. This work was in support of the mine feasibility study recently completed on the project. The work program included ore body delineation of 21 drill holes comprising 3378 m and an additional 232 m in 9 holes of exploration drilling. A ground gravity survey of 20.3 line kilometers was completed.

Geotechnical work on the Victor Diamond Project included the following:

Mine geotechnical drilling:		
Rock	9 holes	1364.5 m
Soils	11 holes	363.0 m
Hydrogeological drilling	3 holes	592.5 m
Civil engineering	62 holes	1126.3 m

A 360 tonne bulk sample from the Tango Extension kimberlite pipe was extracted from 3 large diameter (24 inch) drill holes for diamond evaluation.

Falconbridge Limited – Montcalm Nickel-Copper Project

Falconbridge Limited received approval for mine construction at the Montcalm nickel-copper deposit, located in Montcalm Township, 70 km northwest of Timmins. Access to the site is by forest access road from Highway 101, 15 km west of Timmins. During the year, Falconbridge Limited began site preparations and construction of a settling pond at the minesite.

Porcupine Joint Venture – Pamour Mine

The Porcupine Joint Venture is owned by Placer Dome Inc. (51%) and Kinross Gold Corporation (49%). Placer Dome is the operator. The company worked on re-developing the Pamour mine, formerly operated by Royal Oak Mines Ltd. and closed in 1999, as a large open pit mine operation. During the year, the existing mine and mill infrastructure was removed and site preparation began for developing the open pit mine. Engineering work on re-routing Highway 101 to south of Three Nations Lake, and diking off the north part of that lake to allow development of the open pit is ongoing.

River Gold Mines Ltd. – Mishi – Magnacon Complex

In 2003, River Gold Mines Ltd. commenced an underground exploration program budgeted at about $3.0 million at the past producing Magnacon Mine. The program included dewatering of the underground workings, a comprehensive compilation of existing data, diamond drilling and development of priority targets and the commencement of a haulage/exploration drift towards the Mishi deposit (C. Hartley, River Gold Mines Ltd., personal communication, 2003).

The past producing Magnacon Mine is situated in the Mishibishu Lake greenstone belt, approximately 1 km east of the operating Mishi open pit mine. The Mishibishu Lake Deformation Zone (MLDZ) hosts both deposits. The MLDZ is a 45 km long, 2.5 km wide, arcuate zone that is coincident with a major mafic metavolcanic – clastic metasediment contact. The contact is proximal to the northern margin of the Mishibishu Lake greenstone belt. Gold mineralization in the MLDZ is associated with shear-zone hosted quartz veins with pyrite, arsenopyrite, galena, chalcopyrite and minor pyrrhotite, as well as sulphide-bearing schists found adjacent to those veins (Sage and Heather 1991).

The Magnacon deposit was discovered in 1984 and was operated between 1989 and 1990 by Muscocho Explorations Ltd. The mine produced 34 000 ounces of gold from 265 000 tonnes of ore. The deposit underlies the River Gold Mines Ltd. mill and has extensive underground workings to a depth of 200 metres. All previous production came from above a depth of 120 metres. At the end of 1999, the drill indicated reserves at the mine were estimated to be 1.47 million tons at an average grade of 0.19 ounce per ton gold (Timmins Regional Resident Geologist Office files).

St. Andrew Goldfields Ltd. – Clavos Gold Project

St. Andrew Goldfields Ltd. owns the Stock mine located in Stock Township and the Clavos property in German Township. The Stock mine has been closed for several years and the mill that formerly provided custom-milling service to other area mines has been idle since 2000. St. Andrew Goldfields Ltd. constructed a new road access from Finn Road to the Clavos property in preparation for ramp development and underground bulk sampling on the Clavos property. Site clearing, preparation and overburden stripping commenced in November. Additional diamond drilling was carried out at the Clavos property and at the Stock mine.

Table 2. Mine production and reserves in the Timmins District

Mine	Production in 2003		Production in 2002		Reserves at end of 2003	
	Tonnage @ Grade	Total Commodity	Tonnage @ Grade	Total Commodity	Tonnage	Grade
Agrium Inc., Kapuskasing Phosphate Operations	1 760 000 tonnes @ 36%	979 500 tonnes P_2O_5	1 775 000 tonnes @ 32.2% P_2O_5	1 003 000 tonnes P_2O_5	40 200 000 tonnes incl: proven 19 550 000 t, probable 20 650 000t	22.7% P_2O_5
Falconbridge Limited, Kidd Creek Mine	2 108 493 tonnes @: 2.3% Cu, 4.27% Zn, 58 g/t Ag		2 229 000 tonnes @: 2.12% Cu, 5.87% Zn, 78 g/t Ag		20 800 000 tonnes incl: proven 12 600 000 t probable 8 200 000 t	2.01% Cu, 6.15% Zn, 64 g/t Ag
Luzenac Incorporated, Penhorwood Mine	201 480 tonnes @ 46.5% talc	57 150 tonnes talc	191 122 tonnes @ 48.6% talc	56 576 tonnes talc	34 859 017 measured, 5 360 344 indicated	22% talc (recoverable)
Porcupine Joint Venture Placer Dome (CLA) Limited, Dome Mine	3 697 657 tonnes @ 2.85 g/t Au	314 759 ounces	3 621 923 tons @ 0.070 opt Au	280 206 oz Au	*21 871 000 tonnes incl: 10 935 000 t @ 1.41 g/t Au, probable 10 736 000 @ 2.0 g/t Au	1.5 g/t Au
Porcupine Joint Venture, Hoyle Pond Mine	374 463 tonnes @ 12.27 g/t Au	135 018	454 000 tonnes @ 11.96 g/t Au	157 287 oz Au	*880 000 tonnes incl: proven 328000 t @ 13.00 g/t Au, probable 560 000 t @ 12.43 g/t Au	12.64 g/t Au
River Gold Mines Ltd., Eagle River Mine	235 000 tons @ 0.265 opt Au	70 903 ounces	281 000 tonnes @ 8.17g/t	73 938 oz Au	*1 550 000 tons incl: proven 631 200 tons @ 0.251 opt Au, probable 914 600 tons @ 0.236 opt Au	0.242 opt Au
River Gold Mines Ltd., Mishu Mine	29 600 tons @ 0.11 opt Au	3267 ounces	18 000 tonnes @ 4.3 g/t	2570 oz Au	49 000 tons	0.11 opt Au

*Note :: Abbreviations. N/A – Data not available; g/t – grams per tonne; opt – ounces per ton. * Figures from 2002.*

Table 3. Gold Production in the Timmins Regional Resident Geologist District to the end of 2003.

Mine Name	Township	In Production	Tons Milled	Oz. Au	Grade[1]
Ankerite/March	Deloro	1926-1935	317 769	61 039	0.19
Aquarius	Macklem	1984, 1988-89	139 634	27 117	0.19
Aunor Pamour(#3)	Deloro	1940-1984	8 482 174	2 502 214	0.30
Banner	Whitney	1927-28,-33,-35	315	670	0.13
Bell Creek	Hoyle	1987-91, 1992-94	576 017	112 739	0.196
Bonetal	Whitney	1941-51	352 254	51 510	0.15
Bonwhit	Whitney	1951-54	200 555	67 940	0.34
Broulan Porcupine	Whitney	1939-1953	1 146 059	240 660	0.21
Broulan Reef Mine	Whitney	1915-65	2 144 507	498 932	0.23
Buffalo Ankerite	Deloro	1926-53, 78	4 993 929	957 292	0.19
Cincinnati	Deloro	1914, 1922-24	3 200	736	0.23
Concordia	Deloro	1935	230	16	0.07
Coniarum/Carium	Tisdale	1913-18, 1928-61	4 464 006	1 109 574	0.25
Crown	Tisdale	1913-21	226 180	138 330	0.61
Davidson-Tisdale	Tisdale	1918-20, 1988	53 221	2 438	0.26
Delnite (open pit)	Deloro	1937-64 1987-88	3 847 364 56 067	920 404 3 602	0.20 0.77
DeSantis	Ogden	1933, 39-42, 61-64	196 928	35 842	0.18
Detour Lake	Sunday Lake Area	1983-99	16 005 557	1 781 858	0.111
Dome	Tisdale	1910-2003	91 717 560	15 156 616	0.165
Faymar	Deloro	1940-42	119 181	21 851	0.180
Fuller (Vedron)	Tisdale	1940-44	44 028	6 566	0.15
Gillies Lake	Tisdale	1921-31, 35-37	54 502	15 278	0.28
Goldhawk (open pit)	Cody	1947 1980	636 40 000	53 3 967	0.08 0.10
Halcrow-Swayze	Halcrow	1935	211	40	0.19
Hallnor (Pamour #2)	Whitney	1938-68, 81	4 226 419	1 690 560	0.40
Hollinger- Schumacher	Tisdale	1915-1918	112 124	27 182	0.24
Hollinger Pamour Timmins Property	Tisdale	1910-68 1976-88	65 778 234 2 615 866	19 327 691 182 058	0.29 0.07
Hoyle – Falconbridge	Whitney	1941-44,46-49	725 494	71 843	0.10
Hoyle Pond	Hoyle	1985 - 2003	4 920 817	1 900 943	0.385
Hugh-Pam	Whitney	1926, 48-65	636 751	119 604	0.19
Jerome	Osway	1941-43, 56	335 060	56 893	0.17
Joburke	Keith	1973-75, 79-81	440 117	43 571	0.10
Kingbridge/Gomak	Chester	1935-36	1 387	98	0.07
Marlhill	Hoyle	1989-91	156 800	30 924	0.199
McIntyre Pamour Schumacher (ERG Tailings recovery)	Tisdale	1912-88 1988-89	37 634 691 2 549 189	10 751 941 18 260	0.29
McLaren	Deloro	1933-37	876	201	0.23
Moneta	Tisdale	1938-43	314 829	149 250	0.47
Naybob (Kenilworth)	Ogden	1932-64	304 100	50 731	0.17
Nighthawk	Macklem	1995-99	1 479 607	175 803	0.12
Owl Creek	Hoyle	1981-89	1 984 400	236 880	0.12
Pamour #1 (Incl. pits 3, 4 & 7)Hoyle	Whitney	1936-99	45 795 863	4 078 525	0.09
Pamour (other sources)	Whitney	1936-99	7 416 634	676 645	0.091
Paymaster	Deloro	1915-19, 22-66	5 607 402	1 192 206	0.21
Porcupine Lake (Hunter)	Whitney	1937- 40,- 44	10 821	1 369	0.13
Porcupine Peninsular	Cody	1924-27,-40,-47	99 688	27 354	0.27
Preston	Tisdale	1938-68	6 284 405	1 539 355	0.24
Preston NY	Tisdale	1933	2 800	153	0.05
Preston/Porcupine Pet	Deloro	1914-15	NA	314	
Preston/Porphyry Hill	Deloro	1913-15	46	312	6.78
St. Andrew Goldfields – Stock	Stock	1989-94, 2000	815 429	129 856	0.16
Tionaga/Smith Thorne	Horwood	1938-39	6 653	2 299	0.35
Tisdale Ankerite	Tisdale	1952	14 655	2 236	0.15
Tommy Burns/ Arcadia	Shaw	1917	21	14	0.28
Vipond	Tisdale	1911-41	1 565 218	414 367	0.26
[1]Grade: ounce gold per ton	**Total**		**331 190 371**	**66 616 722**	**0.201**

Table 4. Gold production from the Wawa area to the end of 2003.

Mine Name	Township	In Production	Tons Milled	Oz. Au	Grade (ounce/ton or gram/tonne)
Alden-Goudreau	Cowie	1937, 40, 43, 45	13 479	3220	0.276
Centennial	Naveau	1939-40	8612	610	14.1
Cline	Jacobson	1938-40, 1947-48	331 842	63 328	5.2
Darwin/Grace	McMurray	1902-03, 07-08, 10, 23, 25, 30, 35, 37, 40, 43-44	45 528	15 191	3.0
Deep Lake	McMurray	1736-1938, 1943	2790	1633	1.7
Eagle River	Point Isacor	1995-2003	1 824 882	517 324	9.7 g/t
Edwards	Jacobson	1938	1537	485	3.2
		1997-2002	389 309	140 258	11.2 g/t
Holdsworth Prospect	Corbiere	1933	60	10	6
Kremzar	Finan	1988-90	392 858	37 678	4.5 g/t
Magino/Algoma Summit	Finan	1930-40, 1988-92	768 679 +	113 228	4.5 g/t
Magnacon	Mishibishu Lake	1989-90	165 000	15 356	0.09
Minto (includes Jubilee and Cooper)	McMurray	1929-1942	184 600	37 678	4.9
Mishi	Mishibishu Lake	2002	18 000	2570	4.3 g/t
		2003	29 600	3267	0.11
Murphy/Algold /Amherst	Abotossaway	1926-32, 36-38, 1940	23 211	2450	9.5
Norwalk/Manxman	Naveau	1904, 1910	820	60	13
Parkhill	McMurray	1902, 29, 30-38, 40-44	125 778	54 301	2.3
Ranson	Rabazo	1939	774	156	4.96
Renabie	Leeson	1947-70, 1981-91	5 583 895	1 100 000	0.2
Smith/Van Sickle	McMurray	1935-36	9228	536	17.2
Stanley	McMurray	1936	1963	84	23.3
Surluga	McMurray	1968-69, 1988-89	87 460	8898	0.10
Total			**10 009 905**	**2 118 321**	**0.212**

Table 5. Base metal production in the Timmins District to the end of 2003.

Mine Name	Township	In Production	Ore Milled	Grades
Alexo	Dundonald	1912-19	51 857 tons	4.5% Ni, 0.55% Cu
		1943-44	4 923 tons	
Canadian Jamieson	Godfrey	1966-71	816 173 tons	2.44% Cu, 4.22% Zn
Jameland	Jamieson	1969-72	509 356 tons	0.99% Cu, 0.88% Zn
Kam Kotia	Robb	1943-44	6.6 Mtons	1.1% Cu, 1.17% Zn,
		1961-72		0.10 oz/T Ag
Kidd Creek	Kidd	1966-2003	138.289 Mtonnes	2.4% Cu, 6.51% Zn,
				0.263% Pb, 82 g/t Ag
Langmuir #1	Langmuir	1990-91	111 502 tons	1.74% Ni
Langmuir #2	Langmuir	1972-78	1.1 Mtons	1.43% Ni
McIntyre	Tisdale	1963-82	10 Mtons	0.67% Cu
Redstone	Eldorado	1989-92	294 895 tons	2.4% Ni
		1995-96	10 228 tons	1.7% Ni
United Obalski	Godfrey	1966	Produced 240 tons Cu concentrate	

EXPLORATION ACTIVITY

Active exploration projects underway in the Timmins District in 2003 are listed in Table 8 with locations indicated in Figures 2c, 2e, 2f and 3. Exploration projects specific to the Wawa area are listed in Table 9 and their locations are indicated in Figure 2g. Highlights of select projects throughout the district are described below.

Admiral Bay Resources Inc. & James Bay Energy Ltd. – Moose River Basin, Coal Bed Methane Project

Since 2002, Admiral Bay Resources Inc. has been acquiring ground in the James Bay Lowlands in order to investigate the alternative energy potential of the identified lignite reserves within the James Bay Lowlands. Admiral Bay acquired their property based on the limited exploration data available on the lignite resources of the Moose River Basin. The last recorded activity in this area was completed in the early 1980's by the Ontario Energy Corporation and its subsidiaries Ontario Energy Resources Ltd. and ONEXCO Minerals Ltd. who were primarily interested in the lignite potential and other industrial minerals (silica and clay). This exploration program consisted of reconnaissance mapping, 59 reverse circulation drill holes (5199 m), sampling, assaying and down-hole geophysics (Admiral Bay Resources Inc., press release, December 12, 2002).

The Moose River Basin Coal Bed Methane (CBM) – Lignite Project is located within the James Bay Lowlands and consists of 5 separate claim blocks comprising 257 680 acres. The claim blocks are situated in Garden, Gentles, Kipling and Sanborn townships and West of Gentles Area.

Research by the company has shown that the coal of the Moose River Basin satisfies the criteria for Coalbed Methane production. A key factor recognized by Admiral Bay's engineers is the potential resource of both thermogenic and biogenic gas resources. Unlike deeper-seated coal reserves, the Moose River basin has the potential for significant biogenic gas sources in the coal seams. Admiral Bay's consulting partner, James Bay Energy has calculated that the potential bituminous coal resources may exceed 7 billion tonnes. The company has estimated that this coal resource could contain up to 1 trillion cubic feet of gas (Perry and Ryan 2002).

In the winter of 2002-03, the company completed the Sanborn 03-1 test well. The well intersected two coal seams totaling 5.18 m and 15 samples were analysed. Results were reported as "total gas" in standard cubic feet per ton (scft/ton) on a "dry ash free" (DAF) basis. Coal seams averaged 14.03 scft/ton across 5.18 m with a 15.85 m coal bed. Individual coal samples ranged from a high of 29.94 to a low of 0.16 scft/ton (Admiral Bay Resources Inc., press release, May 21, 2003).

Encouraged by the results of the 2002-03 drilling, the company commenced a surface gas survey of their claims. The technique detects minute methane gas seep patterns from coal seams where coal gas is stored in reservoirs. This

survey detected areas of active gas seepage over all of the coal seams tested. Four high priority targets were identified. They vary in size from 1 to 12 km^2 and are being drill tested in the winter of 2003-04. Two different drills and support methods are being utilized. A helicopter supported drill rig is being used to test the shallower, higher rank coal targets in the Gentles Township area. A larger, hydraulic core drill will test coal seams along the southern margin of the Moose River Basin using winter road access (Admiral Bay Resources Inc., press releases, January 13 and 20, 2004).

Arctic Star Diamond Corp. and Oasis Diamond Exploration Inc. – Enigma Property

Oasis Diamond Exploration Inc. conducted a summer field program of geological mapping, sampling and outcrop stripping on their Enigma Property in Menzies Township, northwest of the town of Wawa. Exploration efforts focussed on the Enigma occurrence and the newly discovered Dogma target located approximately 700 m northwest of the Enigma occurrence. The diamond-bearing bedrock exposures on the Enigma property are interpreted by C. E. Fipke of Arctic Star, to be comprised of metamorphosed kimberlite (Arctic Star Diamond Corp., press release, September 15, 2003).

Three diamonds were recovered from a 217.04-kg sample taken from the Enigma occurrence in 2003. The sample was composite in nature and was made up of 10-kg samples collected at 5 metre intervals along the western contact of the occurrence. The largest of the diamonds measured 0.512 mm x 0.463 mm x 0.115 mm (Oasis Diamond Exploration Inc., press release, December 22, 2003). At the end of the year, Oasis was preparing a winter exploration program to drill-test the metakimberlite model at the Enigma site. The drilling will determine the overburden depth, location and orientation of the heterolithic breccia to the east and south of the Enigma occurrence (Oasis Diamond Exploration Inc., press release, December 1, 2003).

In November, Oasis completed a 5-hole (492 m) diamond-drilling program on the Dogma target. All five holes were drilled in an umbrella pattern from a single collar in order to test the pipe shape observed on surface. All holes intersected mafic, heterolithic breccia and xenolith-bearing rocks similar to those observed at the Enigma occurrence (Oasis Diamond Exploration Inc., press releases, November 26, December 1 and December 22, 2003). Preliminary results from the diamond analysis indicate that the Dogma target is diamondiferous. Drill core from hole No. 16 (total sample weight 93.12 kg) returned 4 microdiamonds (Arctic Star Diamond Corp., press release, January 22, 2004).

Oasis Diamond also reported the results of a 2003 diamond-drilling program on the Sigma site. No diamonds were recovered from the drill core. The remainder of the core will be examined petrographically. The Sigma site is located approximately 9 km southeast of the Enigma and Dogma occurrences. The Sigma was originally suggested as the source for diamond-bearing float found in the area (Oasis Diamond Exploration Inc., press release, November 26, 2003; Marchand 2002).

Band-Ore Resources Ltd. – Corbiere Property

Band-Ore Resources Ltd. completed a program of geological mapping, prospecting and sampling on their gold property in Corbiere Township. Three new gold occurrences were discovered on the property as a result of this work.

A grab sample of cherty, magnetite-rich iron formation (Big Lake Iron Formation) containing 5-10% pyrite returned an assay of 10.01 g/t gold. Two additional grab samples of similar material returned values of 9.69 g/t gold and 0.10 g/t gold. A second gold occurrence, located in sericite-carbonate altered rock approximately 300 m southwest of the first gold occurrence, returned gold values of 4.71 g/t gold, 4.77 g/t gold and 4.14 g/t gold. Further to the west, 4 grab samples from an alteration zone (sericite-carbonate-pyrite) returned values of 7.21 g/t gold, 5.16 g/t gold, 5.83 g/t gold and 0.021 g/t gold (Band-Ore Resources Ltd., press release, December 1, 2003).

This sampling program was a follow-up to reconnaissance work completed by Corona Corporation in 1989. Corona identified a north-northwest-trending shear zone, termed the Key Lake Shear, that passed through felsic metavolcanic rocks and feldspar porphyry. A single grab sample collected of quartz-carbonate-pyrite float returned an assay of 1.4 g/t gold (Pryslak 1990).

Band-Ore Resources Ltd. – Thorne Property

Band-Ore Resources Ltd. completed 31 diamond-drill holes (10 000 m) in a surface drilling program on their Thorne Property, located west of Timmins. The property hosts the Golden River Zone, which contains an inferred resource of approximately 4 million tonnes grading 3 g/t gold (approximately 400 000 ounces contained gold).

As a result of the 2003 diamond-drilling program, the company announced the discovery of four new gold-bearing zones. The No. 14 Zone lies on the west side of the Tatachikapika River and returned the highest gold values from the drill program. Hole GW-03-17 assayed 9.59 g/t gold over 4.5 m, including 14.9 g/t gold over 2.7 m. Elevated gold values were returned from a wide sericite-quartz-carbonate-fuchsite alteration zone in highly altered sediments and porphyry. The No. 14 Zone has been traced intermittently over a strike length of approximately 180 m (Band-Ore Resources Ltd., press releases, 2003).

The Red Porphyry Zone also lies on the west side of the Tatachikapika River, approximately 1 km north of the No. 14 Zone. This zone was tested with seven drill holes (1356 m) and returned assays up to 0.88 g/t gold over 8 m, including 2.0 m of core that assayed 2.18 g/t gold (drill hole GW-03-24). This zone is characterized by hematite-sericite-pyrite alteration (Band-Ore Resources Ltd., press releases, 2003).

The west-trending Thibault Horizon lies in the south part of the property approximately 1.6 km south of the Golden River Zone (East Zone). It consists of a sericite-fuchsite-quartz-carbonate altered zone that returned a best intersection of 0.26 g/t gold over 1.5 m in drill hole GS-03-12. It was tested with a total of 5 drill holes in 2003 (Cavey 2003a).

The Keno Zone is located in the south-central part of the Thorne Property and lies approximately 1.5 m south of the Golden River Zone. It was discovered by drill-testing an IP anomaly and was tested with 5 diamond drill holes (1534 m). The best assay on the zone was obtained from drill hole GS-03-01 that intersected a 5.4 m core length assaying 0.50 g/t gold. The zone is hosted within a sericite-quartz-carbonate-fuchsite alteration envelope that is part of a porphyry-felsic intrusive complex (Cavey 2003a).

Band-Ore Resources Ltd. and Kennecott Canada Exploration Inc. – GQ Property

In the spring of 2003, Kennecott Canada Exploration Inc. completed a 13-hole (2612 m) diamond-drilling program to test the stratigraphy along strike of known diamondiferous occurrences on the GQ Property, located approximately 20 km north of Wawa. The drill program was successful in locating three, parallel diamond-bearing horizons, the Engagement, Cristal Extension and F-Zone. However, Kennecott also observed that the drilling demonstrated that thick diamondiferous heterolithic breccia units could rapidly thin to a few centimeters rather than carry wide widths for hundreds of meters or kilometers (Cavey 2003b). Diamond recovery results from the 2002 and 2003 diamond drilling programs are reported in Tables 6 and 7.

Kennecott also completed a summer exploration program of prospecting, surface stripping, geological mapping, trenching and sampling. One of the most significant results was the discovery of the possible southern extension of Pele Mountain Resources Ltd.'s Cristal horizon onto the GQ Property. A 25.5-kg bedrock sample collected from this area returned 9 diamonds. Kennecott terminated the GQ Property exploration agreement with Band-Ore on September 24, 2003 and plans no further work on the property (Band-Ore Resources Ltd., press release, September 24, 2003).

De Beers Canada Exploration Inc., under the terms of an agreement signed with Band-Ore in November 2003, will process the three mini-bulk samples extracted in the fall of 2002 by Band-Ore under the guidance of Kennecott. At year's end, the two samples removed from the Engagement Zone were crushed in preparation for shipment to and processing at De Beers' facility in Grande Prairie, Alberta (Band-Ore Resources Ltd., press release, December 15, 2003). The three bulk samples consist of two, 20-tonne samples from the Engagement Zone and one, 16-tonne sample from Area SE-F.

Table 6. Microdiamond results from 2002 diamond drilling on the GQ Property, Musquash Township.

Zone	Hole	Interval (m)	Interval Width (m)	Sample Weight (kg)	Total Diamonds Recovered	+.150 Sieve Size	+.212 Sieve Size	+.300 Sieve Size	+.425 Sieve Size	+.600 Sieve Size
Engagement	GQ-02-01	10 - 79.2	69.2	175.65	1407	942	378	66	19*	2*
Engagement	GQ-02-02	89.3 - 98.9	9.6	24.99	147	95	45	6	1	0
		115.3 - 166.7	51.4	142.79	1160	749	341	64	6**	0
Rainbow	GS-02-03	12.8 - 21	8.2	21.52	27	16	6	2	2	1

** 5 macrodiamonds remained on a 0.5 mm sieve*
*** 1 macrodiamond remained on a 0.5 mm sieve*
Information derived from Band-Ore Resources Ltd., press releases, 2003.

Table 7. Microdiamond results from 2003 diamond drilling on the GQ Property, Musquash Township.

Zone	Hole	Interval (m)	Interval Width (m)	Sample Weight (kg)	Total Diamonds Recovered	+.150 Sieve Size	+.212 Sieve Size	+.300 Sieve Size	+.425 Sieve Size	+.600 Sieve Size
Engagement	03GQ06	159 - 166.7	7.6	17.55	22	12	8	2	0	0
		176.9 - 180.6	3.7	8.54	1	1	0	0	0	0
F-Zone	03GQ10	13.0 - 42.8	29.8	77.77	26	15	10	0	1	0
	03GQ11	45.9 - 47.5	1.6	4.63	4	3	1	0	0	0
Walker Lake	03GQ16	54.9 - 65.2	10.3	26.39	19	9	8	0	1	1
		73 - 103.3	28.3	79.95	16	5	7	3	1	0
JR27	03GQ17	31.3 - 31.9	0.6	2.05	3	1	2	0	0	0
		45.6 - 66.0	17.1	44.89	6	5	1	0	0	0

Information derived from Cavey 2003b.

Big Red Diamond Corporation

In partnership with several other companies including Arctic Star Diamond Corporation, Metalex Ventures Ltd., Kel-Ex Development Ltd., Dumont Nickel Inc. and Oasis Diamond Exploraion Inc., Big Red Diamond Corporation carried out a number of exploration programs in the Attawapiskat area. Airborne magnetic surveys amounted to 27 012 line km and detailed ground magnetic surveys of 250 line km were completed. Diamond drilling included 3 holes totalling 853m. In addition, 331 samples for kimerlite indicator mineral surveys were collected by hand augering methods and 242 samples were recovered by power augur drilling that amounted to 2384 m. A total of 800 heavy mineral samples were collected from till and stream deposits (B. Polk, personal communication, 2004).

Claude Rundle Mines Limited

Claude Rundle Mines Limited control the past producing Rundle mine in Newton Township and the Orofino mine in Silk Township. No work was done on either site during the year but the company received their certificate of approval for tailing pond construction from the Mininstry of Environment in advance of doing underground exploration work on the Rundle Mine property. The Orofino Mine property was inactive throughout the year. (K. Pieterse, personal communication, 2004).

Condor Gold Corp. – Jackrabbit Project

The Jackrabbit Project is located in the north half of Chester Township, approximately 20 km west of the town of Gogama. In January 2003, Condor Gold Corp. completed a 24 hole (11 800 foot) diamond-drilling program on their property. Assay results released from drill hole E-03-27 returned values ranging from 0.051 g/t gold over 28.5 feet to 6.6 g/t gold over 3.7 feet (Condor Gold Corp., press release, March 26, 2003). The Jackrabbit Project hosts an indicated resource of 342 000 tons grading 0.36 ounce per ton gold (123 000 contained ounces of gold) and an inferred resource of 100 000 tons grading 0.36 ounce per ton gold (36 000 contained ounces of gold). The calculated mining grade is 363 000 tons grading 0.29 ounce per ton gold using a 0.10 ounce per ton gold cutoff. It includes a recovery of 85% of the contained gold and a 25% dilution during mining (McBride 2002).

Conquest Resources Limited – Aurora Gold Project

Conquest Resources Limited completed an 8-hole (1532 m) diamond-drilling program on their Aurora Gold Project in the winter of 2002-03. The Aurora property is located approximately 4 km south of the former Detour Lake Mine in the Detour Lake greenstone belt. The property consists of three separate blocks of ground comprising a total of 6770 hectares. The drilling program confirmed that the GB (Golden Borealis) Zone is a major gold-bearing structure. The zone was extended for 1.8 km along trend and is open to the west and at depth. At least three lenses of high-grade mineralization were identified within the structure. Significant assays from the drill program include 5.45 g/t gold over 0.6 m in hole CQ-03-05. This intersection included a higher grade section that assayed 11.17 g/t gold over 0.25 m. Two other zones of mineralization were intersected in the same drill hole. The zone is parallel to the Detour Lake Zone that hosts the past-producing Detour Lake Mine. Placer Dome Inc. originally discovered the GB Zone in the late 1990's. The best intersection from Placer Dome's drilling returned a value of 58.53 g/t gold over 3 m (Conquest Resources Limited, press release, May 22, 2003).

Conquest also discovered the Sagimo Lake Shear (SLS) Zone during this drill program. This zone was tested with two drill holes that returned best assays of 3.15 g/t gold over 0.9 m that included a high-grade section of 6.42 g/t gold over 0.25 m. These grades are associated with zinc sulphide-rich quartz veins. The SLS Zone is a north-trending, cross cutting regional shear zone that Conquest suggests terminates immediately east of the Detour Lake open pit (Conquest Resources Limited, press release, May 22, 2003).

Corona Gold Corporation and Harte Resources Corporation – Dayohessarah Lake Property

Corona Gold Corporation and joint venture partner Harte Resources Corporation commenced an early winter diamond drilling program on the Sugar Zone in December 2003. By the end of the year, Corona completed 10 holes in a minimum 3000 m diamond-drilling program. The drill program is designed to expand on an inferred mineral resource estimated to contain 430 000 tonnes averaging 11.19 g/t gold (0.326 ounce per ton gold) at a cut-off grade of 3 g/t gold, that represents approximately 155 000 ounces of gold. Gold is present in two distinct parallel zones within a 3-km long structure. The two zones trend north-northwest, dip 65° west and are separated by 15 to 25 m of mafic metavolcanic rocks. Each zone is approximately 12 m thick and consists of quartz-feldspar porphyry sills within pillowed mafic metavolcanic rocks. Gold is associated with quartz veins, stringers and siliceous zones within and adjacent to the sills.

The most significant assay results from the drill program returned values of 59.57 g/t gold over 0.32 m from drill hole CH-58 and 50.08 g/t gold over 0.56 m in drill hole CH-59. These results were returned from the Lower Gold Zone. The best assay results from the Upper Gold Zone is 24.10 g/t gold over 0.64 m in drill hole CH-57 (Corona Gold Corporation and Harte Resources Corporation, press releases, December 15 and 24, 2003).

Dia Bras Exploration Inc. – Macaskill and Magpie Properties

Dia Bras Exploration Inc. completed a reconnaissance exploration program over both the Macaskill and Magpie properties. The Magpie property encompasses an area of 65.62 km^2 that abuts both the GQ Property (Band-Ore Resources Ltd.) and the Festival Property (Pele Mountain Resources Ltd.) to the west. The Macaskill property (80.63 km^2) is located 10 km west of the Magpie property and lies to the north and west of ground held by Spider Resources Inc. and KWG Resources Inc.

The program consisted of reconnaissance-scale prospecting and geological mapping of the two properties. A total of 25 stream sediment samples was collected for kimberlite indicator minerals evaluation. Three large (30-kg) samples of heterolithic breccia were collected from 3 locations in the north-central area of the Magpie property. These samples were collected from the same area where Oasis Diamond Exploration Inc. recovered 8 microdiamonds from a 32.02-kg sample of the same rock type (Dia Bras Exploration Inc., press release, August 13, 2003).

Greenshield Resources Ltd. – Algoma – Talisman Properties

Greenshield Resources Ltd. has an option to explore for and develop mineral prospects in four patented townships located in the Swayze greenstone belt. The four townships, Newton, Coppell, Dale and Frater are located approximately 100 km southwest of Timmins. Dome Exploration Ltd., who had an option agreement with Algoma-Talisman Minerals, last conducted exploration in these townships between 1982 and 1987. Dome completed a reconnaissance mapping and lithogeochemistry survey over Newton, Coppell and Dale townships. Based on the results of these surveys, Dome conducted focussed ground geophysical surveys, stripping, trenching, mapping and diamond-drilling programs over isolated targets in the townships. Since 2002, Greenshield has focussed their exploration efforts on a series of gold occurrences in the east central part of Newton Township. These occurrences include the Dome West Zone and the Dome West Extension.

Following up on positive results from their winter 2002 diamond-drill program on the Dome West Extension, Greenshield completed an induced polarization and resistivity survey over the same target in 2003. The survey was designed to test the surface and depth extensions of the Dome West Extension Zone. The survey area covered approximately 13.2 km^2 and included the western strike extension of the Dome West Extension Zone.

Approximately 20 new gold mineralization targets were identified through a program of prospecting, mechanical stripping and sampling in Newton and Dale townships. Most surface showings are observed to occur along east-trending regional high strain structural zones, although some occurrences lie within north-trending structures that intersect the regional fabric. The discovery of two new surface showings in Newton Township suggest the Dome West Extension Zone has a potential strike length of at least 1400 m. The highest value returned from surface prospecting to the west of the Dome West Extension Zone was 9.26 g/t gold from a surface grab sample.

The most significant discovery made in Newton Township in 2003 was the A Zone. It is located approximately 2 km north of, and trends parallel to, the Dome West Extension Zone. The A Zone is a silicified, high strain zone in mafic, metavolcanic rocks that are intruded by quartz-feldspar porphyry dikes and sills. The zone is east-trending and has a minimum strike length of 450 m. Channel samples taken from this zone returned values ranging from 3.31 g/t gold over 2.5 m to 7.16 g/t gold over 1.5 m.

Greenshield also completed a late fall diamond-drilling program consisting of 2484 m in 26 diamond-drill holes. Diamond-drill holes tested newly discovered gold occurrences in Dale Township and several surface occurrences in Newton Township. Although these drill holes did not yield significant intersections, Greenshield may re-examine the sites at a later date. The remaining drill holes tested the A Zone and the westward extent of the Dome West Extension Zone. Significant drill intersections include 0.54 g/t gold over 6.5 m (including 1.25 g/t gold over 1.2) at a depth between 66.7 and 73.2 m. At the time of writing, assay results were still pending from approximately half of the drill holes (Greenshield Resources Ltd., press releases, 2003).

Holmer Gold Mines Ltd. – Murphy Mine

In October, Holmer Gold Mines Ltd. announced the acquisition of four patented claims from N.S.A.I. Holdings Limited. The claims are located in central Abotossaway Township and comprise former holdings of the past-producing Murphy Gold Mine. The Murphy Gold Mine, also known as the Golden Algoma Mine, operated sporadically between 1921 and 1938 when it produced 2427 ounces of gold. The property was last explored in the mid to late 1980's by Mascot Gold Mines Ltd. and Prime Explorations Ltd. who conducted ground geophysical, geochemical and geological surveys and an extensive diamond-drilling program. Orequest Consultants Ltd. calculated a mineral inventory on the property in 1988. Total tonnage and grade figures for reserves in the Main Vein amount to 184 677 tons at an average of 0.357 ounce per ton gold (66 103 contained ounces gold). The mineral inventory on the North Vein amounts to 64 727 tons at an average grade of 0.156 ounce per ton gold (10 123 contained ounces of gold) (Cavey et al. 1988). Holmer Gold commenced a surface diamond-drilling program on the property in the fall of 2003. At the time of writing, the drill program was still operating.

Lake Shore Gold Corp. – Timmins High-Grade Gold Property

Lake Shore Gold Corp. optioned the Timmins High-Grade Gold property from Holmer Gold Mines Limited in mid-2003. The property is located in Bristol Township, approximately 18 km west of the city of Timmins. All of the known gold mineralization on the property occurs within a 150 to 200 m wide, highly altered deformation zone. Mineralization is hosted within quartz-tourmaline veins and stockworks along a metavolcanic-metasedimentary contact in the Main Zone and the Hanging Wall Veins 1, 2 and 3. Mineralization in the Footwall Zone is associated with disseminated sulphides within mafic metavolcanic rocks. Disseminated sulphides and quartz veins containing native gold occur in the Ultramafic Zone. In 2002, Watts, Griffis and McOuat Limited calculated an indicated mineral resource of 422 000 tonnes at an uncut grade of 17.78 g/t gold and 890 000 tonnes grading 6.4 g/t gold (cut grade) (Lake Shore Gold Corp., press release, May 27, 2003).

The company focussed their 2003 diamond-drilling program on increasing the existing mineral resource in the shallow Ultramafic Zone, open pit delineation drilling and extending all known mineralized zones to depth. Lake Shore completed 41 surface diamond-drill holes (approximately 10 000 m) this year. Significant assays from the 2003 drill program on the Main Zone include: 3.4 g/t gold over 4.6 m in drill hole TG-03-23 and 2.1 g/t gold over 38 m in drill hole TG03-27. Hole TG03-13, which tested a new area east of the Main Zone, where discrete high-grade quartz tourmaline veins and quartz-carbonate veins were exposed by outcrop stripping, returned a value of 15.8 g/t gold (cut to 50 g/t gold) over 4.5 m in core.

Significant intersections from the Ultramafic Zone include 7.0 g/t gold over 21.8 m in drill hole TG03-3. Values of up to 13.4 g/t gold over 8 m including 19.4 g/t gold over a 1.5 m section was returned from the Footwall Zone in drill hole TG03-37 (Lake Shore Gold Corp., press releases, 2003).

SGS Lakefield Research Limited completed a preliminary test program on four samples from the property late in 2003. One sample for each of the four zones was submitted for gold/silver recovery using cyanidation and gravity separation/cyanidation methods. Each sample consisted of 8-10 kg of coarse rejects from diamond drill core. Gold extraction for all samples ranged from 91.6% to 98.8%. Calculated head grades for the Footwall Zone sample were 7.25 g/t gold using cyanidation (CN) and 6.04 g/t gold using gravity and cyanidation (Grav-CN). Calculated head grades for the other zones are: Main Zone sample – 11.7 g/t gold (CN) and 13.3 g/t gold (Grav-CN); Ultramafic Zone sample – 14.1 g/t gold (CN) and 13.6 g/t gold (Grav-CN); Hanging Wall Zone sample – 22.6 g/t gold (CN) and 23.2 g/t gold (Grav-CN) (Lake Shore Gold Corp., press release, January 8, 2004).

Pelangio Mines Inc. and Trade Winds Ventures Inc. – Block A - Detour Mine Area

In mid-2003, Pelangio Mines Inc. optioned the Block A portion of their extensive Detour Lake greenstone belt holdings to Trade Winds Ventures Inc. The property comprises 3 leased mining claims and 22 contiguous mining claim units and lies immediately adjacent to the western boundary of the Detour Mine property. Block A contains

the "M" Zone structure defined by Placer Dome Inc. in the late 1990's. This structure has an inferred resource of 173 000 ounces of gold located between surface and 300 metres (Pelangio Mines Ltd., press release, September 19, 2003). In December 2003, Trade Winds tested the high-grade gold zone lying to the east and along strike from the M Zone with 2 diamond-drill holes. No assay results were available at the time of writing (Trade Winds Ventures Inc., press release, January 23, 2004).

Pele Mountain Resources Inc. and De Beers Canada Exploration Inc. – Festival Property

In 2003, Pele Mountain Resources Inc. continued an exploration program of detailed geological mapping, stripping and outcrop washing and sampling of the diamond occurrences in the southwest corner of the Festival Property, located north of Wawa. Early in 2003, Pele announced the recovery of a 0.72-carat, white, gem-quality diamond, as well as an additional 39 other commercial-sized diamonds from a 13-tonne bedrock sample processed from the Cristal occurrence. By May of 2003, Pele had recovered more than 160 commercial-sized diamonds from bulk samples (125 tonnes) taken from the Genesis and Cristal diamond occurrences.

During the winter of 2003, Pele completed a single 219 m diamond-drill hole on the Cristal occurrence. The drill hole was positioned to determine the thickness and down-dip continuity of the occurrence and of the unit hosting the occurrence. The diamond-bearing unit has a true width of 90 to 100 m at the Cristal occurrence. Additional stripping along strike of the Cristal occurrence confirmed the continuation of related rock types to the northwest for over 850 m in intermittent outcrops (Pele Mountain Resources Ltd., press releases, January 22, April 3 and July 3, 2003).

At the end of July 2003, Pele announced the company had entered into an option and joint venture agreement with De Beers Canada Exploration Inc. on the Festival Property. Under the terms of the agreement, Pele has maintained the right to continue prospecting, exploration and development work on the property. Exploration work completed by De Beers on the property in 2003 included a high resolution (50-m spacing) airborne magnetic and electromagnetic geophysical survey, mechanical stripping, washing, channel sampling for microdiamond processing, detailed geological mapping and sampling for petrography and whole rock chemistry at the Mumm, Moet and Genesis diamond occurrences. De Beers also completed relocation and modification of the on-site crushing and screening plant, and completed 250 tonnes of bulk sampling. By the end of the year, the first shipments of bedrock from the Genesis occurrence had arrived at De Beers' Dense Media Separation (DMS) plant in Grande Prairie, Alberta and processing was expected to commence in December (Pele Mountain Resources Inc., press releases, July 31, October 21 and December 3, 2003).

Platinum Group Metals Ltd. – Lakemount Property

Platinum Group Metals Ltd. (PTM) completed an 8-hole diamond-drilling program on the Lakemount Property in Esquega Township. The Lakemount property was last explored by Firesand Resources Ltd. in 1989-91 who completed prospecting, outcrop stripping, mapping and ground geophysics. Firesand also conducted a 5-hole diamond-drilling program. Previous diamond drilling on the Sunrise Zone included 23 000 m of drilling in 146 drill holes, with the last extensive drill program being completed in 1957 by Lakemount Mines Ltd. A reserve calculation prepared for Amax Exploration Inc. in 1968 indicates a total reserve of 2.49 million tons at a grade of 0.36% Cu and 0.55% Ni. Of the total reserve, 1.68 million tons at a grade of 0.37% Cu and 0.55% Ni are considered to be open pittable (McGregor 1968).

Results from the drilling program include 0.74% Ni, 0.67% Cu, and 0.93 g/t of combined platinum, palladium and gold over 5.5 m. The drilling program indicates that there is good potential for excellent grade and thickness of nickel-copper mineralization, and that the platinum and palladium represent a significant previously unrecognised component to the total metal value of the deposit. PTM plans a follow up program of detailed surface and downhole UTEM geophysical surveys in the spring of 2004 (Platinum Group Metals Ltd., press release, January 27, 2004).

Spider Resources Inc. and KWG Resources Inc. – McFaulds Lake Area

In October 2002, Spider Resources Inc. and KWG Resources Inc. announced that De Beers Canada Exploration Inc. discovered copper-zinc sulphide mineralization in a reverse circulation (RC) drill hole within the Spider #3 project area. After penetrating through 22.5 m of overburden and Paleozoic cover, the RC drill hole cut 8 m containing sulphide that returned 1.61% Cu, 0.34% Zn, 0.13% Pb, 9.9 g/t Ag and 0.13 g/t Au. The RC hole tested a 220 m by 60 m magnetic anomaly. Follow up exploration by Spider and KWG in 2003 found volcanogenic massive sulphide-type mineralization at this and 2 other locations just north of McFaulds Lake about 90 km east of the First Nation community of Webequie and 560 km northeast of Thunder Bay.

In 2003, the McFaulds Lake #1 prospect was tested by several drill holes with a best intersection of 26.55 m grading 0.90% Cu, 2.440% Zn, 0.135 g/t Au and 5.52 g/t Ag. Included in this intersection are 2 higher grade intervals: 2.75 m grading 2.84% Cu, 2.040% Zn, 0.290 g/t Au and 17.78 g/t Ag; and 4.6 m grading 0.84% Cu, 4.410% Zn, 0.06 g/t Au and 4.27 g/t Ag. The McFaulds Lake # 2 occurrence, located about 5 km southeast of the #1 prospect, is a 12.5 m diamond drill hole intersection grading 1.81% Cu, 0.0132% Zn, 0.22 g/t Au and 6.06 g/t Ag. The McFaulds Lake #3 occurrence, about 1.5 km southwest of the McFaulds Lake #1, is a 27.75 m diamond drill hole intersection grading 0.506% Cu, 4.83% Zn, 0.070 g/t Au and 6.06 g/t Ag followed by 7.95 m grading 1.502% Cu, 0.12% Zn, 0.321 g/t Au and 8.47 g/t Ag.

In a report prepared for Spider Resources Inc., James Franklin (2003) reports on a one-day examination of drill core and the results of whole rock, trace element and rare earth element geochemical analysis. The McFaulds Lake mineralization has associated extensive, intense hydrothermal alteration that has obscured identification of the primary lithologies. Felsic rocks, identified by their geochemistry, "belong to a class of high-temperature rhyolite-dacite rocks that are typical of areas with high VMS potential". Of a Zr/Y versus Y plot of the geochemical data, Franklin (2003) writes "The McFaulds Lake samples lie in part in the FII field" of Lesher et al. (1986), "but several samples are near the FIII field. This association clearly indicated that the petrogenetic environment in this area is strongly conducive to VMS formation."

The discovery of VMS-style mineralization at McFaulds Lake caused a staking rush through 2003. Approximately 570 sq. km was staked in the area at year-end. Other companies with large land positions in the area include McDonald Mines Exploration Ltd., Freewest Resources Canada Inc., Noront Resources Ltd., Probe Mines Ltd., Candor Ventures Corp., Greenstone Exploration Co. Ltd. and Condor Diamond Corp. Work by these companies has mostly included airborne magnetometer and electromagnetic surveys (Spider Resources Inc., press releases, October 10, 2002 through November 13, 2003; www.spiderresources.com).

Strike Minerals Inc. – Edwards-Plowman Claims

Strike Minerals Inc. completed a diamond-drilling program on the Edwards mine property in Jacobson Township. The property consists of three claims known collectively as the Edwards-Plowman Claims. Assay results released early in 2003 from the Plowman One Zone included values up to 30.84 g/t gold over 1 foot of core length from drill hole P-01-02. Diamond-drill hole 03-02, completed in the fall of 2003, intersected a stockwork of veins at depth in a sericitized quartz porphyry dike. Strike interprets this intersection as a new discovery of a second, deeper tier of ladder veins lying about 75 m south of the Edwards shaft and at a vertical depth of approximately 290 m. A 1-foot section of drill core from drill hole 03-2 returned 3.859 ounces per ton gold between 1105.0 and 1106.0 ft. (Strike Minerals Inc., press releases, January 8 and November 17, 2003).

Timmginn Explorations Limited – Gilles Lake, Tisdale Township

Timmginn Explorations Limited holds a block of claims covering 210 hectares underlying the city of Timmins around Gilles Lake. The property lies immediately west of the Hollinger Mine property and north of the Moneta Mine property. Since 1993, Timmginn has completed 632 diamond drill holes on the property amounting to 21 080 m. Lithogeochemical analysis for gold on 2400 samples has been completed. In 2003, six diamond drill holes were

completed and an earlier hole was deepened. The drilling amounted to 3681 m (R. Ginn, Timmginn Explorations Limited, written communication, 2004).

Table 8. Exploration activity in the Timmins District in 2003.

Abbreviations

AEM ..... Airborne electromagnetic survey
AM ..... Airborne magnetic survey
Beep ..... Beep Mat survey
Bulk ..... Bulk sampling
Comp ..... Compilation
DD ..... Diamond drilling
GC ..... Geochemical survey
GEM ..... Ground electromagnetic survey
GL ..... Geological survey
GM ..... Ground magnetic survey
GPS ..... Global Positioning System survey
Grav ..... Gravity survey
GT ..... Geotechnical survey
HLEM ..... Horizontal loop electromagnetic survey
HM ..... Heavy mineral sampling
IP ..... Induced polarization survey
Lc ..... Linecutting
Met ..... Metallurgical testing
OD ..... Overburden drilling
PEM ..... Pulse electromagnetic survey
PET ..... Petrography
Photo ..... Photography
Pr ..... Prospecting
RES ..... Resistivity survey
Samp ..... Sampling (other than bulk)
Str ..... Stripping
Topo ..... Topography
Tr ..... Trenching
VLFEM ..... Very low frequency electromagnetic survey

No	Company/Individual (Occurrence Name) or Property	Township/Area (Commodity)	Exploration Activity
1	2004428 Ontario Inc. (McWatters Deposit)	Langmuir Tp. (Ni)	GM, Lc
2	2004428 Ontario Inc. (Redstone Mine)	Langmuir Tp. (Ni)	DD-2-323 m
3	2004428 Ontario Inc. (Bobs Lake Property)	Whitney Tp. (Au)	GM, Lc
4	2004428 Ontario Inc. & Liberty Mineral Exploration Inc.	Whitney Tp. (Au)	GM, Tr, GL
5	876097 Alberta Limited (Bonar Stefansson Lake Project)	Bonar Tp.	AEM, AM
6	Admiral Bay Resources Inc.	Kipling, Sanborn, Gentles, Gardiner tp., West of Gentles area (coal bed methane)	Gas desorption tests, DD
7	Alliance Explorations Inc.	Swayze, Rollo tp.	Pr
8	Aurora Platinum Corp.	Montcalm Tp. (Ni, PGE)	AEM, AM
9	Band-Ore Resources Ltd.	Thorneloe Tp. (Au)	AM, DD-31, Assay
10	Belmont Resources Inc. (Tolmie-2 Property)	Tolmie Tp. (diamonds)	GM, VLFEM, DD-1-152.5 m, Assay
11	Belmont Resources Inc. (Tolmie Project)	Tolmie Tp. (diamonds)	GM, GEM, Photo, DD -1-283 m, Assay, GPS
12	Big Red Diamond Corporation	Valentine Tp. (diamonds, Cu)	AM, AEM, GM, Lc

No	Company/Individual (Occurrence Name) or Property	Township/Area (Commodity)	Exploration Activity
13	Big Red Diamond Corporation & Dumont Nickel Inc. JV	BMA 525 834, BMA 526 834, BMA 527 834 (diamonds)	OD, Samp, HM, PET, Assay
14	Big Red Diamond Corporation & Kel-Ex Development Ltd. JV	BMA 524 832 (diamonds)	GC, HM, Samp, Pr
15	Big Red Diamond Corporation & Kel-Ex Development Ltd. JV	BMA 526 834 (diamonds)	OD, Samp, PET, Assay
16	Big Red Diamond Corporation & Kel-Ex Development Ltd. JV	BMA 526 834, BMA 527 834 (diamonds)	OD, Samp, HM, PET, Assay
17	Big Red Diamond Corporation & Kel-Ex Development Ltd. JV	BMA 526 833, BMA 525 833 (diamonds)	GC, HM
18	Big Red Diamond Corporation & Kel-Ex Development Ltd. JV	BMA 525 833 (diamonds)	GC, HM, GM
19	Big Red Diamond Corporation & Kel-Ex Development Ltd. JV	BMA 525 833 (diamonds)	OD, GC, HM, Samp, Pr
20	Big Red Diamond Corporation & Kel-Ex Development Ltd. JV	BMA 523 832, BMA 522 832 (diamonds)	OD, GC, HM, Samp, Pr
21	Big Red Diamond Corporation & Kel-Ex Development Ltd. JV	BMA 525 832 (diamonds)	Tr, Samp
22	Big Red Diamond Corporation & Kel-Ex Development Ltd. JV	BMA 524 833, BMA 525 833, BMA 524 832 (diamonds)	GC, HM, Samp, Pr, GM, DD-1-81 ft, OD-1-60 ft
23	Big Red Diamond Corporation & Kel-Ex Development Ltd. JV	BMA 523 833, BMA 523 832 (diamonds)	OD, GC, HM, Samp, Pr
24	Bonhomme, J. C. (Fairhaven Grid)	Denton Tp. (Au)	DD-1-144 m, Assay
25	BRC Development Corporation	Fenton Tp. (Cu)	Str, Tr
26	Bryant, J.D./Croxall, J.E./Kangas, M.	Adams Tp. (Ni, Co, Pd, Au, Ag)	GC, Samp, Assay
27	Bryant, J.D./Croxall, J.E./Kangas, M.	Eldorado Tp. (Ni, Co, Pd, Au, Ag)	GC, Samp, Assay
28	Canabrava Diamond Corporation & Navigator Exploration Corp. (KAT Project)	BMA 527 834 (diamonds)	Other (Geophysical Modeling)
29	Canadian Golden Dragon Resources Ltd., East West Resource Corporation, Cross Lake Minerals Ltd. & Falconbridge Limited (Nighthawk Lake JV)	Sheraton Tp. (Cu, Zn, Ag)	DD-1-240 m, Assay
30	Canadian Golden Dragon Resources Ltd. & Maple Minerals Corp. (West Porcupine Property)	Reeves, Sewell tp. (Au)	DD-3-729 m
31	Caron, M.	Tisdale Tp. (Au)	GL
32	Caron, M.	Whitney Tp. (Au)	GL
33	Cole, B.L.	Shaw Tp.	Lc, IP, VLFEM, GM

No	Company/Individual (Occurrence Name) or Property	Township/Area (Commodity)	Exploration Activity
34	Conquest Resources Ltd., Prism Resources Inc. & Boliden Westmin (Canada) Limited JV (Aurora Property)	Sunday Lake Area, Hopper Lake Area (Au)	DD-8-1532 m, Samp, Assay
35	Croxall, J.E.	Whitney Tp. (Au)	Str
36	Davis, P.C. (McWatters Property)	Langmuir Tp. (Ni)	VLFEM, GM, Lc
37	De Beers Canada Exploration Inc. (Delta-1 Kimberlite)	BMA 526 833 (diamonds)	DD-6-1416 m
38	De Beers Canada Exploration Inc. (India-1 Kimberlite)	BMA 526 834 (diamonds)	DD-2-402 m, GL, GT, Grav
39	De Beers Canada Exploration Inc. (Attawapiskat Kimberlites)	BMA 526 834 (diamonds)	DD- 8-1232 m, Bulk, Comp, GT
40	Dialex Minerals Inc. & Wycliffe Resources Inc.	BMA 526 854, BMA 526 861, BMA 526 862, BMA 527 854, BMA 527 861, BMA 528 854, BMA 528 861, BMA 531 854, BMA 533 852, BMA 533 854, BMA 533 861, BMA 534 852, BMA 534 853, BMA 534 861, BMA 537 852, BMA 538 853 (diamonds)	AEM, AM
41	Dios Exploration Inc. (Coral Rapids Project)	Hobson tp. (diamonds)	GM, DD-3-79.2 m
42	Dumont Nickel Inc., Big Red Diamond Corporation & Kel-Ex Development Ltd. JV (Dumont-1 Block)	BMA 528 841 (diamonds)	OD, Samp, PET, Assay
43	Dumont Nickel Inc., Big Red Diamond Corporation & Kel-Ex Development Ltd. JV (Dumont-2 Block)	BMA 527 834, BMA 528 834, BMA 527 841, BMA 528 841 (diamonds)	OD, Samp, PET, Assay
44	Echo Bay Mines Ltd. (Pominex Zone)	Macklem Tp. (Au)	DD-20-4191 m, Assay
45	Falconbridge Limited & Explorers Alliance Corporation	Godfrey Tp. (Cu, Pb, Zn)	GC, Assay
46	Galata, F.	Keefer Tp. (Cu, Zn, Co)	Str, Tr, Samp, GL
47	Geodex Minerals Ltd. & Moneta Porcupine Mines Ltd. (Potter Stock)	Aurora, Newmarket, Pyne, St. John tp. (Au)	GC
48	Gowest Amalgamated Resources Ltd.	Whitney Tp. (Au)	GM, DD-2-796 m
49	Gowest Amalgamated Resources Ltd.	North of Feagan Lake Area (Au)	DD-2
50	Gervais, L.N.	Byers, Loveland tp. (Cu, Pb, Zn)	GM
51	Greenshield Resources Ltd. (Algoma-Talisman Properties)	Newton, Dale tp. (Au)	IP, RES, Samp, Str, GL, Pr, DD-26-2484 m, Assay

No	Company/Individual (Occurrence Name) or Property	Township/Area (Commodity)	Exploration Activity
52	Hedman Resources Ltd.	Horwood Tp. (serpentine)	DD-26-1720 m
53	Inco Limited	Duff, Evelyn, Hanna, Mahaffy, Mann, Reaume tp (Ni)	Lc
54	Inco Limited	Eldorado Tp. (Ni)	Lc, GM, RES, DD-7-3069 m
55	Inco Limited	Sheldon, Marceau tp. (Ni)	GM, DD-2-339 m
56	Kenrich-Eskay Mining Corporation & Starfire Minerals Inc. (Triple Crown Property)	Eldorado Tp. (Ni, Cu, PGE)	DD-1-207 m, Assays, GL
57	Kenrich-Eskay Mining Corporation & Starfire Minerals Inc. (Langmuir South Property)	Langmuir Tp. (Ni, Cu, PGE)	DD-4-816 m, Assays, GL
58	Kerr, G.	Robb Tp. (VMS)	Str
59	Kinross Gold Corporation, Gervais, L.N. & Placer Dome (CLA) Limited	Price Tp. (Au)	DD-3-500 m, Samp, Assay
60	L.B.L. Richgold Mines Inc. (Meadow Lake Property)	Deloro, Ogden tp. (Au, Cu, Ni, Pb, Zn)	Beep, Samp, GL, Assay, Pr
61	Lake Shore Gold Corp. (Timmins High-Grade Property)	Bristol Tp. (Au)	AM, GC, DD-41-10 000 m, Met
62	Lake Shore Gold Corp. (Thunder Creek Property)	Bristol Tp. (Au)	DD
63	Larchex Inc. (Alexo Mine)	Dundonald Tp. (Ni, PGE)	Bulk
64	Liberty Mineral Exploration Inc. (Shaw Dome Project)	Eldorado Tp. (Ni)	UTEM, GM
65	Liberty Mineral Exploration Inc. (McWatters Property)	Langmuir Tp. (Ni)	GM, DD-9
66	McKinnon, D. (Otter Rapids Property)	Wacousta Tp. (diamonds)	Str, GL
67	Meunier, D.	Loveland Tp. (Cu, Zn, Ag, Au)	DD-1-330 m, GM, GL, Str, PEM, Samp, Assay
68	Meunier, D.	Reid Tp.	GM
69	Moneta Porcupine Mines Inc.	Byers, Loveland tp. (Ni)	GM
70	Moneta Porcupine Mines Inc.	Murphy Tp. (Au, VMS)	IP
71	Moneta Porcupine Mines Inc. & Porcupine Joint Venture (Kayorum Property)	Whitney Tp. (Au)	DD-5-4177 m
72	Morin, D. & Patrie, J.	Sandy Tp.	Pr, Samp
73	Noront Resources Ltd. (McFaulds Lake Property)	BMA 527 861 (VMS)	AEM, AM

No	Company/Individual (Occurrence Name) or Property	Township/Area (Commodity)	Exploration Activity
74	Northern Shield Resources Inc. (Highbank Lake Property)	BMA 524 861, BMA 524 862 (Ni, PGE)	AM, GC, IP
75	Northern Shield Resources Inc.	Bradley Tp. (diamonds)	AM, HM, DD
76	Northern Shield Resources Inc.	Boyle, McKnight tp. (diamonds)	GM, DD-1-165 m
77	Northern Shield Resources Inc. (Faint Hope Property)	Ireland Tp. (diamonds)	GM, OD-1-12 m, PET
78	Ontex Resources Limited (Faymar Property)	Deloro Tp. (Au, Ni, PGE)	Lc, GM, IP, Pr, GL, Samp, Assay, DD-8-1066 m
79	Opawica Explorations Inc. (Chance JV)	Kidd Tp. (VMS)	DD-1-324 m
80	Pele Mountain Resources Inc. (Attawapiskat Property)	BMA 515 861, BMA 516 861, BMA 527 832, BMA 527 833, BMA 527 834, BMA 528 833, BMA 528 834, BMA 528 841, BMA 531 834 (diamonds)	GM, HM, Samp
81	Poirier, R.J. (Bristol Lake Property)	Bristol Tp. (Au)	GM
82	Porcupine Joint Venture	German Tp. (Au)	OD 8-123.4 m, GT
83	Porcupine Joint Venture (McIntyre Mine)	Tisdale Tp. (Au)	DD-2-4984 m, Assay
84	Porcupine Joint Venture	Destor-Porcupine Fault, City of Timmins (Au)	AM
85	Robert, J.	Whitney Tp. (Au)	GL
86	Robitaille, R.R. & Lalonde, D. (Texmont Extension Property)	Bartlett, Geikie tp. (Ni)	Lc, GM, HLEM, GL
87	Scott, D.S.	Swayze Tp. (Au)	Lc, GM
88	St. Andrew Goldfields Ltd. (Stock Mine)	Stock Tp. (Au)	DD-8-4026 m, Assay
89	St. Andrew Goldfields Ltd. (Clavos Property)	Stock Tp. (Au)	DD, Underground Bulk
90	Spider Resources Inc. & KWG Resources Inc. (MacFadyen Project)	BMA 528 834, BMA 527 834 (diamonds)	Lc, GM
91	Spider Resources Inc., KWG Resources Inc. & Diagem International Resource Corp. (McFaulds Lake)	BMA 527 854, BMA 527 861, BMA 528 854, BMA 528 861 (VMS)	AEM, GM, DD-18, Assay
92	Timmginn Explorations Limited	Tisdale Tp. (Au)	DD-9-3532 m, Assay
93	Tom Exploration Inc.	Bristol Tp. (Au)	GM

No	Company/Individual (Occurrence Name) or Property	Township/Area (Commodity)	Exploration Activity
94	Trade Winds Ventures Inc. & Pelangio Mines Inc. JV (Block A Property)	Sunday Lake Area, West of Sunday Lake Area (Au)	DD-2, Assay
95	Valgold Resources Ltd. (Hunter Mine)	Whitney Tp. (Au)	GL
96	Vault Minerals Inc. (Attawapiskat Property)	BMA 532 831, BMA 523 831, BMA 523 832, BMA 524 831, BMA 524 832, BMA 525 832 (diamonds)	Samp, HM
97	Vedron Gold Inc. & Northcott Gold Inc. (Davidson-Tisdale Property)	Tisdale Tp. (Au)	DD-17-1948 m, Assay, Comp

Table 9. Exploration activity in the Wawa area in 2003.

Abbreviations

AEM	Airborne electromagnetic survey	GC	Geochemical survey
AM	Airborne magnetic survey	GL	Geological survey
Beep	Beep Mat survey	Pr	Prospecting
Bulk	Bulk sampling	Samp	Sampling (other than bulk)
DD	Diamond Drilling	Str	Stripping
DDH	Diamond drill hole(s)	Tr	Trenching

No	Company/Individual (Occurrence Name) or Property	Township/Area (Commodity)	Exploration Activity
1	Arctic Star Diamond Corp. and Oasis Diamond Exploration JV (Enigma property)	Menzies Tp. (diamond)	GL, Samp, Str, DDH (5 holes), diamond analysis
2	Band-Ore Resources Ltd. (Corbiere property)	Corbiere Tp. (Au)	GL, Pr, Samp
3	Band-Ore Resources Ltd. and Kennecott Canada Exploration Inc. (GQ property)	Musquash Tp. (diamond)	DD-12-2400 m, Str, Tr, Samp, GL
4	Booth, A.E. (Deep Lake Property)	McMurray Tp. (Au, diamonds)	Beep, Pr, Samp, Assay
5	Clement, C.C. (Mays Shaft)	Rabazo Tp. (Au)	Pr, Samp, Assay
6	Corona Gold Corporation and Harte Resources Corporation (Sugar Zone)	Hambleton, Odlum tp (diamond)	DD
7	Dia Bras Exploration Inc. (Macaskill and Magpie Properties)	Macaskill, Musquash tp (diamonds)	GC, GL, Pr, Samp

No	Company/Individual (Occurrence Name) or Property	Township/Area (Commodity)	Exploration Activity
8	Garber, R.J., Londry, J.W. and Maclachlan, B.A. (Abbie Lake Property)	Abbie Lake Area (diamonds)	GC
9	Holmer Gold Mines Ltd. (Murphy Mine)	Abotossaway Tp. (Au)	DD
10	Konig, G. and Bugyra, M. (Blackington Lake Property)	Rabazo Tp. (Au)	Pr, Str, Samp
11	McKinnon D. (Hawkins Gold Project)	Hawkins Tp. (Au)	Str, Gl, Tr
12	Patricia Mining Corp. (Ego Claims)	Abotossaway Tp. (Au)	GL, Samp
13	Pele Mountain Resources Ltd. and De Beers Canada Exploration Inc. (Festival Property)	Lalibert Tp. (diamond)	AM, AEM, Bulk, GL, DD, Pr, Samp, Str
14	Platinum Group Metals Ltd. (Lakemount Property)	Esquega Tp. (Cu, Ni, PGM)	DD
15	River Gold Mines Ltd. (Eagle River Mine)	Point Isacor Area (Au)	DD
16	Strike Minerals Inc. (Edwards – Plowman Claims)	Jacobson Tp. (Au)	DD (7000m)

RESIDENT GEOLOGIST PROGRAM STAFF AND ACTIVITIES

The Timmins Resident Geologist Office was staffed by B.T. Atkinson, Regional Resident Geologist, A.C. Wilson and G.Wm. Seim, District Geologists. A.C. Wilson provided on going field services to clients in the Wawa area through bi-weekly visits during the field season from May to October. G. Cooper served as the District Support Geologist on a contract basis. N. Campbell provided summer field and office support under the Summer Experience Program 2003.

The Timmins office also serves as the regional office for the Northeast Ontario Regional Resident Geologist Program. J. Ireland is the Regional Manager responsible for the Timmins and Kirkland Lake regional offices and the Sudbury and Sault Ste. Marie district offices. F. Boucher is the Administrative Assistant, D.M. Draper is the Regional Support Geologist and R. Fraser is the Regional Land Use Geologist for Northeastern Ontario.

Table 10. Summary of staff activities, Timmins Regional Resident Geologist Office, 2003.

Activity	
Assessment files received (including donations)	250
Client visits - Office	1412
Client visits - Drill Core Library	62
Geological tours given	12
Geoscience library additions (reports; papers; maps)	82
Property visits by staff	58
Telephone inquiries	2705
MDI records ADDED	115
MDI records UPDATED	121
MDI records DELETED	3

PROPERTY EXAMINATIONS

A number of property visits made during the course of the year by office staff are described below. Property visits provide geological insight into an area and help in identifying key indicators that could be deemed favourable for the discovery of new mineral deposits. Recommendations for exploration derived from property visits are presented in a separate section of this report.

Bigwater Lake Area, Murphy and Wark Townships

Access and Location

Access to the Bigwater Lake area is by Highway 655, 14 km north of the junction with highway 101 in Timmins. Numerous side roads leading off the highway permit access to the immediate area and the Kidd Creek mine railroad bisects the area east of Bigwater Lake. A series of gravel pits on the east side of Highway 655 provide aggregate from the Murphy Esker north of Timmins. Access trails east of the gravel pits provide access east of Bigwater Lake, however, these are in part impassable to vehicles due to lowland swamps.

Previous Work

Many companies have held claims in the area both before and since the discovery of the Kidd Creek mine. At present, most of the land is held as patented mining claims. Unpatented mining claims held by L. Gervais cover the immediate area examined.

In 1964, Camflo Mines Ltd. completed electromagnetic and induced polarization surveys on Lot 6, Concession IV in Murphy Township. Gulf Lead Mines Ltd. completed ground geophysical surveys and diamond drilled 3 holes totalling 826 feet on the south part of the same lot. Tuff, greywacke and agglomerate were encountered in drill cores. National Explorations Ltd. did ground geophysical surveys on Lot 4, Concession VI, Murphy Township, but no additional follow up work was reported. On the south half of Lot 5, Concession VI, Texas Gulf Sulphur Ltd. reported interesting geology in drill logs. This included sepentinite with asbestos fibres, graphitic tuff and pyrite rimming pillow selvages of mafic volcanic rocks. In 1970, Noranda Exploration Co. Ltd. encountered felsic fragmental rocks with disseminated pyrite, pyrrhotite and chalcopyrite associated with graphite-bearing felsic breccia.

A detailed summary of previous work in Murphy and Wark townships is provided in Berger (1999).

Geology

Much of the area is covered by deep overburden, but outcrops occur along the railroad bed and elsewhere east of Bigwater Lake. Outcrops include ultramafic volcanic rocks that are altered in places to talc-carbonate schists. Mafic volcanic rocks and a unit of felsic volcanic breccia with sulphide clasts outcrop on a railroad cut on lot 4, Concession VI, Murphy Township. A 3 m thick bed of polymictic boulder conglomerate containing subangular to rounded clasts of spinifex textured komatiite, mafic and intermediate volcanic rocks occurs adjacent to a talcose ultramafic unit (See Figure 4). A narrow band of wacke occurs interbedded with the conglomerate. Berger (1999) suggests the conglomerate is synvolcanic. Interestingly, the local ultramafic flows exhibit intense talc + carbonate alteration whereas clasts of similar composition contained in the overlying conglomerate are unaltered.

Felsic volcanic rocks (Figure 4) include tuff, lapilli tuff and pyroclastic breccia with sulphide-bearing clasts. The relationship of the felsic volcanic rocks to other rock types could not be determined from the limited outcrop exposures, but the conglomerate lies directly on the ultramafic rocks.

Micaceous alteration in outcrops on the east side of the railroad tracks includes muscovite, biotite and brilliant green (fuchsitic?) mica.

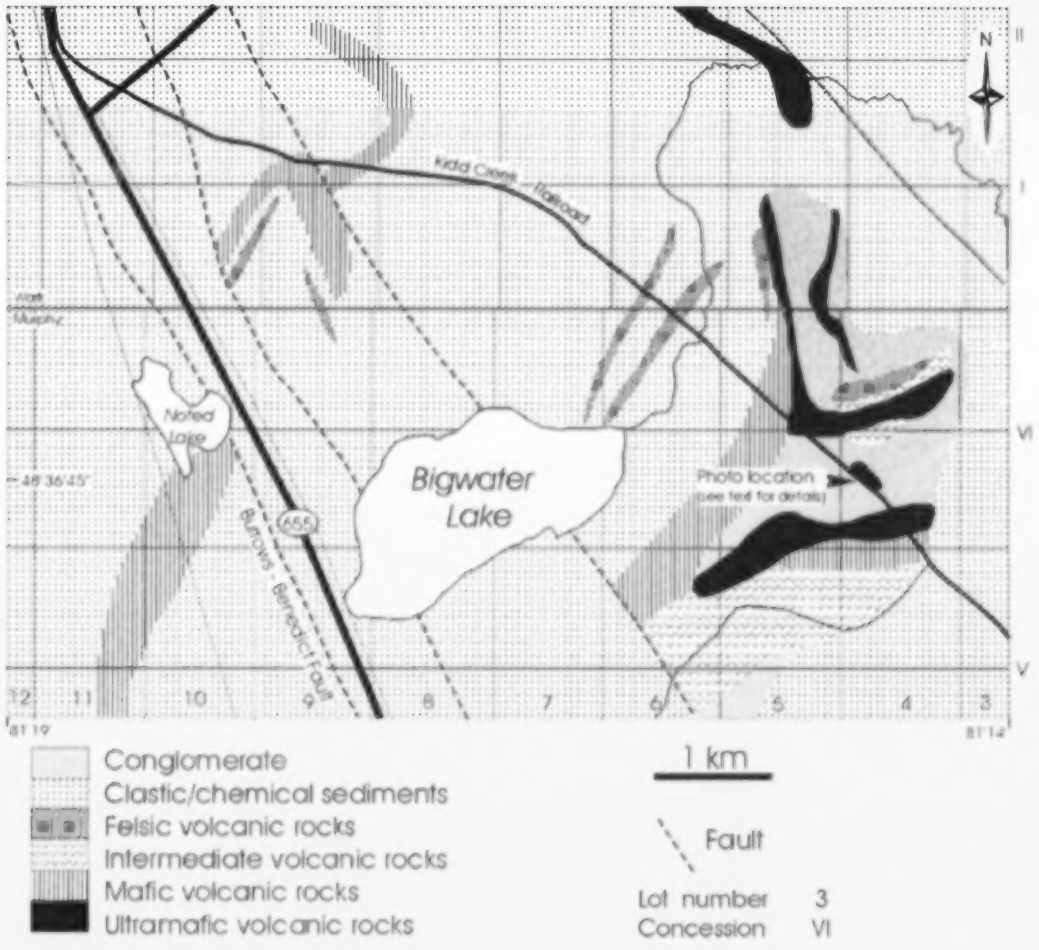

Figure 4. Location and geology of the Bigwater Lake area, Murphy and Wark townships, *geology modified from* Berger, 1999. See Figures 5, 6 and 7 for photogeology along railroad outcrops.

Figure 5. Boulder clast of randomly oriented spinifex-textured komatiite in conglomerate interbedded with komatiites, lot 4, Concession VI, Murphy Township. A colour version of this photo can be found at http://www.mndm.gov.on.ca/mndm/mines/ims/pub/rsa/default_e.asp

Figure 6. Outcrop of heterolithic sulphide-bearing felsic breccia, lot 4, Concession VI, Murphy Township. A colour version of this photo can be found at http://www.mndm.gov.on.ca/mndm/mines/ims/pub/rsa/default_e.asp

Figure 7. Outcrop of biotite altered, intermediate volcaniclastic rock with crudely sorted, subrounded monolithic fragments, lot 6, Concession VI, Murphy Township. A colour version of this photo can be found at http://www.mndm.gov.on.ca/mndm/mines/ims/pub/rou/default_e.asp

Discussion

Although structural aspects of Murphy Township are poorly understood, in part due to the lack of outcrop, from the limited bedding facing directions in sediments, diamond drill cores, and magnetic patterns, some inferences can be made. Northeast-trending fold axes and the trend of outcrops east of Bigwater Lake suggest a complicated structural history for the area. The presence of felsic volcanic rocks with sulphide-bearing clasts, and boulder conglomerates that contain clasts of spinifex-textured komatiite is significant. The proximity of komatiite magma and a sulphur source suggest the area may be attractive for komatiite-hosted sulphide mineralization. Rocks of dacitic composition reported in exploration company drill reports consistently contain elevated nickel values. As well, volcanogenic massive sulphide (VMS) mineralization is indicated in diamond drill core. Copper and zinc mineralization associated with graphite-bearing volcanic rocks augurs well for volcanogenic massive sulphide mineralization in the area.

The presence of felsic to ultramafic volcanic rocks supports correlation of the geology east of the Bigwater Lake area with the mine sequence rocks at the Kidd Creek mine, located only a few kilometers to the northwest, further enhancing the area's attractiveness for VMS exploration. It is suggested that volcanic rocks in the area outcrop as inliers of Kidd Munro assemblage rocks (Kidd Creek mine sequence) within the overlying Porcupine sediments. The outcrop distribution of the Kidd Munro assemblage rocks coincides with northeast-trending fold axes as depicted in Figure 9.

The geological history is further complicated by several major linear structures including the east-trending Pipestone fault and the north-northwest-trending Burrows-Benedict fault.

A number of airborne and ground magnetic and electromagnetic conductors have been identified. Some have been tested by shallow diamond drilling. A gravity anomaly is documented east of Bigwater Lake. Clastic sediments that underlie much of the area inhibit geophysical techniques, so an alternate means of mineral discovery is required. Because the area exhibits much evidence for Kidd Creek type volcanogenic massive sulphide mineralization, it warrants deeper exploration. This would be best achieved by diamond drilling several deep holes in the vicinity of the known mineralization. These drill holes should be oriented to follow the general structural trends of the lithologies. Down-hole geophysical surveys could then be applied to test the depth potential of the area between the deep holes. Where possible, any previously drilled holes could be used for additional down-hole geophysical surveys in the search for Kidd Creek type massive sulphide mineralization.

Dayton Porcupine No. 1 Zone, Deloro Township

The Dayton Porcupine property consists of 40 patented claims located in the southwest part of Deloro Township. The claims are about 9.5 km south of Timmins along Pine Street South. About 1.4 km south of the Paridis Creek crossing a bush trail leads east through the property.

A 1936 report by John W. Storer (Assessment files, Timmins Resident Geologist Office) states that trenching and test pitting had been completed on a 40-claim property in southwest Deloro Township owned by Vortex Deloro Gold Mines. The report identifies 4 zones of gold mineralization: the No. 1 zone on claims 11478, 1077, 8915 and 11584; the No. 2 zone on 11480, 9759 and 10671; the No. 3 zone on 11256; and the No. 4 zone on 11363. The No. 1 zone is reported to consist of "quartz intrusions in phyrotite [*sic*], massive phyrotite and phyrotite in gange of ore body of the Keewatin series, Precambrian. The latter carrying the higher values by channel sample results, i.e. $8.40 or .24 oz. per ton over widths varying from 12 feet to 18 feet and disclosed by trenching for a length of 400 feet and a further 200 feet indicated by pitting."

By 1937, Dayton Porcupine Mines Ltd. held the 40 claims in patent. B.S.W. Buffam and Hamlin B. Hatch reported separately on a diamond drilling program(s) consisting of at least 28 holes on the No. 1 zone, and 3 holes each on the No. 2 and No. 3 zones. B.S.W. Buffam (Assessment files, Timmins Resident Geologist Office) describes the No. 1 zone:

> "The No. 1 Zone consists of a band of siliceous iron formation extending N. 65° W from approximately the point of intersection of the diorite or diabase dyke with the altered, serpentinized diorite on claim 9756, westwards for a distance of approximately 1000 ft. Of the 15 drill holes done along the strike of the zone, 11 holes cut the zone and 2 holes Nos. 7 & 9 -- 2 and 24 at the eastern and western ends did not intersect it. In addition to the 15 holes drilled across the strike, 2 holes were drilled in the iron formation down the dip. Only a few small outcrops of the mineralized iron formation are exposed near the eastern end of the zone. An attempt was made to strip the central portion of the zone in order to bulk sample it but bedrock had not been reached by the end of July.
>
> The zone consists of a siliceous iron formation shattered and locally mineralized with pyrite and pyrrhotite. Near the contacts with the andesites, considerable chlorite and massive pyrrhotite is frequently present. The gold values are not uniformly distributed along any one particular horizon in the altered and mineralized iron formation."

Table 11. Summary of historical assay data for the Dayton Porcupine No. 1 Zone.

	As reported by B.S.W. Buffam	Gold Values in Excess of 0.1 oz./ton (source not identified)
DDH 19	$1.74 over 42.5 ft.	0.12 ounce per ton gold over 10.0 ft
DDH 11	$1.95 over 10.0 ft.	
DDH 17	$2.86 over 30.0 ft.	0.10 ounce per ton gold over 20 ft.
DDH 5	$2.18 over 9.5 ft.	0.11 ounce per ton gold over 2.75 ft.
DDH 1	$3.14 over 8.5 ft.	0.11 ounce per ton gold over 5 ft.
DDH 10	$1.81 over 21.3 ft.	0.16 ounce per ton gold over 2 ft.
DDH 3	$1.40 over 5.0 ft.	
DDH 20	$3.73 over 7.5 ft.	0.22 ounce per ton gold over 2.5 ft.
DDH 4	$1.75 over 4.0 ft.	

There is no public record of work on the Dayton Porcupine patented claims after 1939 when Sylvanite Gold Mines Limited examined the data.

G. Seim visited the Dayton Porcupine property in July 2003 and examined the areas of the No. 1 and No. 3 zones. About 1.4 km south of where Pine Street South crosses Paradis Creek, a bush trail leads southeast across high sandy ground. About 600 m along the bush trail a second trail turns southwest towards the No. 1 Zone. About 100 m along this second trail is a large outcrop area of mafic metavolcanic rock. The outcrop appears to correlate with an outcrop identified by Dayton Porcupine Mines Ltd. to contain the Diorite Zone, a 5 cm to 30 cm, north-trending, steeply dipping quartz vein that reportedly yielded values from $1.40 to $5.20 gold. A couple of narrow quartz veins are present in the outcrop, but these appear barren and showed little evidence of previous sampling. There are some filled in trenches in the vicinity of the outcrop. One long trench trends south toward the location of the No. 1 Zone. A calcitic alteration exhibited in the northern part of the outcrop may have caused early workers to identify the rock as diorite.

South of the outcrop of mafic metavolcanic rock, the terrain slopes down into swamp. Here there is evidence of more recent line cutting. At UTM coordinates 476682 E / 5359368 N (NAD 27, Zone 17) is a low outcrop of carbonatized intermediate to mafic tuff. The rock is very fine-grained, weathers light grey to white and is light grey on fresh surface. A 318°/65° cleavage is present. A sample of this rock containing traces of pyrite and a thin calcite veinlet yielded 1.2 ounce silver per ton.

Further south, at UTM coordinates 476674 E / 5359358N (NAD 27, Zone 17) is a very low outcrop of iron formation about 3 m across. The weakly magnetic iron formation is strongly silicified and brecciated. B.S.W. Buffam used the term "shattered" to describe the brecciation and this seems appropriate given that fairly consistent bedding is evident in the fragments at 318°/80°. The iron formation is banded, weakly jasperoidal to white chert- and magnetite-bearing. Cherty, white quartz and quartz-carbonate veinlets fill fractures between the indistinct fragments of iron formation. The veinlets have a preferred orientation of 260°/90°, but this is not consistent. Pyrite is rare in this outcrop. Three samples of the iron formation were submitted for assay. The sample that contained a trace amount of pyrite yielded the only detectable gold, 0.02 ounce gold per ton. Dayton Porcupine Mines Ltd., found this part of the iron formation to be barren.

Attempts to locate other outcrops of iron formation indicated on geological maps of the Dayton Porcupine property were not successful.

Table 12. Fire assay results for the Dayton Porcupine No.1 Zone.

Sample No.	Description	Ag (oz./ton)	Au (oz./ton)
GWS-03-23	Iron formation cut by sugary white quartz vein, no sulphides	N.D.	N.D.
GWS-03-24	Iron formation cut by sugary white quartz veins and altered by iron carbonate, tr. - 1% py associated with quartz-carbonate	N.D.	0.02
GWS-03-25	Iron formation cut by sugary white quartz vein, no sulphides	N.D.	N.D.
GWS-03-26	Calcite altered intermediate to mafic volcanic cut by 3 mm calcite vein, tr. py disseminated in the rock	1.2	N.D.

N.D. – Not Detected

The Dayton Porcupine No. 1 zone is interesting in that it is one of the few locations in Deloro Township where iron formation carries gold with apparent consistency. In northwest Deloro Township at the Powell prospect (also known as the Puissance prospect), the distribution of gold in a moderately jasperoidal iron formation is erratic despite pervasive silica flooding, quartz veining and sulphidization (pyrite). To the west on strike of the Powell prospect, the iron formation is strongly jasperoidal and not known to contain appreciable gold. If the outcrop of iron formation observed at the Dayton Porcupine No. 1 Zone is representative of the gold-bearing horizon, then the more consistent gold tenor and the weakly to non-jasperoidal chert may be related. Iron formation-hosted gold deposits located in northwestern Ontario (Pickle Crow, Central Patricia, Dona Lake, Musselwhite) occur in non-jasperoidal iron formation. However, the iron formation that hosts gold mineralization at the Golden Rose mine in Afton Township (Emerald Lake) is banded jasper-magnetite. This mine saw limited production of 43 359 ounces gold from 1937 to 1941 (Meyn 1977).

Kindree Prospect, Godfrey Township

The Kindree Prospect is located in the northwest part of leased claim 521809 in Godfrey Township. The prospect is exposed on surface by a T-shaped trench at UTM coordinates 460053 E / 5373865 N (Zone 17, NAD27). Access to the trench is by means of an old forest trail (now an Ontario Federation of Snowmobile Club trail) that leads southwest off of Highway 576 about 750 m southeast of the entrance to the Kamiskotia Ski Resort. About 300 m southwest of the highway, the trail crosses under a power line. On the northwest side of the trail and under the power line is a large area of outcrop. The T-shaped trench is located on the western side of the outcrop area.

There is no public record indicating when the T-shaped trench was excavated. Hogg (1954) refers to the Group III property of P.A. Kindree. Although no work was reported at that time, Hogg indicated 2 pits in the vicinity of the prospect on the geological map of Godfrey Township.

In 1968 and 1969, Hollinger Mines Ltd. completed geological mapping, magnetometer and VLF-EM surveys on the Group 2 property in Godfrey Township. The first drill hole, G2-1-68, of a very large campaign targeted the Kindree prospect and intersected 7.368% Zn, 0.168% Cu and 0.984 ounce per ton Ag over 5 feet (1.52 m) at about 45 m vertical depth. The intersection reported from a rock described as a well banded "chlorite rhyolite tuff". The mineralized interval was described in the diamond drill log as "becomes lightly mineralized with sphalerite, pyrite, pyrrhotite and chalcopyrite". Late in the drill campaign, Hollinger followed up this intersection with 4 additional holes; 2 holes on section and 1 hole each to the northwest and southeast all inclined at -45°. Of the 2 holes drilled on section, the one that cut about 15 m above the initial intersection, G2-101-68, also intersected mineralization in a highly chloritized rhyolite tuff with a reported intersection of 1.40% Zn over 11 feet (3.35 m). Hole G2-102-68 cut beneath the original intersection by about 30 m and did not intersect the chloritized rhyolite tuff or the sulphide mineralization. Hole G2-103-68 tested a section about 15 m southeast of the initial hole and intersected 3.6 m of grey rhyolite tuff at a vertical depth of about 60 m. Minor red sphalerite was reported with this tuff. Hole G2-104-69 intersected the chloritized rhyolite tuff between 23 and 45 m vertical depth. However, sulphide mineralization was intersected deeper in the hole in a rock described as "mass. cherty rhyolite" [*sic*] cut by numerous chloritic stringers and local dark chlorite sections. Reported mineralization in this hole includes 0.45% Zn over 3 feet (0.9 m) and 0.10% Zn, 0.10 % Cu over 3 feet (0.9 m).

In 1981 Samin Canada Ltd. completed a HLEM survey and geological mapping on claims covering the Kindree prospect.

In 1991, Falconbridge Ltd. completed HLEM, VLF-EM and magnetometer surveys over the Kindree prospect.

In 1998, Prospectors Alliance Corp. obtained from Falconbridge Ltd. the right to explore certain properties in Godfrey Township, including the Kindree prospect. MaxMin, gravity and magnetometer surveys were completed. The MaxMin survey indicated 3 north-northwest-trending anomalies. Moderate gravity anomalies were interpreted to flank the MaxMin anomalies.

In early 2000, Explorers Alliance Corp., the successor to Prospectors Alliance Corp., repeated the MaxMin survey to better define the anomalies. Three diamond drill holes, totaling 591 m, tested the MaxMin anomalies. The log for diamond drill hole EGH00-2 describes a 20 m intersection of a unit identified as "Andesite (Rhyolite)" hosting minor concentrations (less than 1%) of disseminated yellow-brown sphalerite, chalcopyrite, pyrite/pyrrhotite. The log for diamond drill hole EGH00-03 indicates narrow intervals of fracture-controlled honey-coloured sphalerite contained in a rhyolite. Assays were not submitted for assessment credit with the drill log. Later, Explorers Alliance Corp. submitted whole rock and trace element geochemical data for the 3 diamond drill holes.

G. Seim examined the rocks in the vicinity of the Kindree Prospect in July 2003. The T-shaped trench was water filled. The dump rock from the excavation of the trench is a chloritized felsic fragmental; lapilli tuff or tuff breccia. Pyrite is the principle sulphide with lesser amounts of black to reddish brown sphalerite, chalcopyrite and galena. Sulphide concentrations up to 5% were noted. The sulphide occurs disseminated through the rock and as blebs and in stringers. Three grab samples were taken from the dump rock. Analytical results are given in Table 13.

Interlayered quartz porphyritic rhyolite and massive spherulitic rhyolite is found in outcrop underneath the power line to the east of the trench. The rhyolite weathers a uniform light-grey. Distinct layering was not observed, rather separate areas with fine (1mm) quartz phenocrysts and with spherules were noted. Two cross cutting, near vertical, fracture cleavages were noted. One striking 320°/75° is cut by a second that trends 125°.

Table 13. Analytical results from dump rock grab samples, Kindree Prospect, Godfrey Township.

Sample No.	Description	Zn ppm	Cu ppm	Pb ppm	Ag ppm	Au oz./t
GWS-03-20	Chloritized felsic fragmental with 3-5 % stringer to disseminated Py, Cp, Sp.	>5000	1970	680	18	N.D.
GWS-03-21	Chloritized felsic fragmental with stringer to 1-2 % disseminated Py, Cp, Sp.	>5000	371	780	8	N.D.
GWS-03-22	Chloritized felsic fragmental with stringer to disseminated Py, Cp, Sp.	>5000	1020	4298	13	N.D.

N.D. = Not Detected

It has been suggested to Explorers Alliance Corp. that the felsic rocks in the vicinity of the Kindree prospect are peralkaline (Lionel Bonhomme, Explorers Alliance Corp., personal communication, 2004). This is supported by higher than normal Na_2O, K_2O, Zr and Y in the whole rock and trace element data submitted by Explorers Alliance for assessment purposes. However, peralkaline rocks by definition are those where the molar ratio ($CaO + Na_2O + K_2O$): Al_2O_3 is >1 and the molar ratio ($CaO + Na_2O + K_2O$): Al_2O_3 for the 36 whole rock analyses submitted by Explorers Alliance Corp. ranges from 0.26 to 1.19 and averages 0.48. This does not support the suggestion that the rocks are peralkaline. Potassic alteration, silicification (bleaching), chloritization and hematite are noted in the drill logs. The whole rock data supports the observed alteration for some of the samples. Calculation of various alteration indices (Table 14) gives a wide range of results indicating intervals of intense alteration and, probably, overprinting of prior alteration geochemistry signatures.

The higher than normal Zr and Y in the trace element data may indicate a very high degree of fractionation in the parent magma. Interestingly, the Zr:Y ratio for many of the samples is in the range of Kamiskotia FIIIb rhyolite from Lesher et al. (1986) of 2.4 to 3.3. The average Zr/Y ratio for the 36 samples is 2.49.

Table 14. Summary of whole rock and trace element data for the Kindree Prospect. *

	SiO_2 wt. %	Al_2O_3 wt. %	Fe_2O_3 wt. %	CaO wt. %	MgO wt. %	Na_2O wt. %	TiO_2 wt. %	K_2O wt. %	MnO wt. %	P_2O_5 wt. %	LOI wt. %	Total
Lowest SiO_2 Rhyolite (strong chlorite and carbonate alteration)	39.72	17.94	18.98	3.19	7.03	4.35	0.82	0.04	0.25	0.10	7.21	99.89
Highest SiO_2 Rhyolite (bleached)	81.09	7.91	3.06	0.64	0.77	3.98	0.21	0.07	0.03	0.02	1.03	98.94
Average value for 36 samples	66.07	14.53	4.83	1.51	1.45	4.90	0.32	2.80	0.07	0.05	2.37	
Minimum value of 36 samples	39.72	7.91	1.06	0.06	0.20	0.39	0.14	0.04	0.02	0.02	0.34	
Maximum value of 36 samples	81.09	18.99	18.98	7.48	7.03	9.85	0.82	11.00	0.25	0.19	7.21	

	Ba ppm	Sr ppm	Zr ppm	Y ppm	Cr ppm	Zn ppm	Nb ppm	Zr/Y	Hashimoto Index	Sericite Index	Chlorite Index	Spitz Index
Lowest SiO_2 Rhyolite (strong chlorite and carbonate alteration)	10	260	1360	445	5	525	130	3.06	48	1	63	4
Highest SiO_2 Rhyolite (bleached)	30	50	440	180	325	35	20	2.44	15	2	29	2
Average value for 36 samples	498	101	527	211	170	191	25	2.49	41	34	36	5
Minimum value of 36 samples	10	20	190	95	5	35	10	1.62	5	1	8	1
Maximum value of 36 samples	2430	300	1360	445	465	1170	130	4.62	93	95	77	42

** Data Source: Timmins Assessment File T-4634 - Explorers Alliance Corp.*
Hashimoto Index = $(MgO + K_2O) / (MgO + K_2O + Na_2O + CaO) \times 100$
Sericite Index = $K_2O / (K_2O + Na_2O) \times 100$
Chlorite Index = $(MgO + Fe_2O_3) / (MgO + Fe_2O_3 + 2CaO + 2Na_2O) \times 100$
Spitz Index = Al_2O_3 / Na_2O

In conclusion, the Kindree Prospect consists of stringer and disseminated base metal sulphides hosted by felsic fragmental and volcanic flow rocks of the Kamiskotia Volcanic Complex (KVC). These rocks appear to occupy a higher position in the stratigraphy of the KVC than the Genex and Canadian Jamieson deposits. Potassic alteration, chloritization, and silicification, all of which can be associated with VMS alteration systems, have been observed in the rocks. The observed alteration is supported by whole rock data. Further study is needed to determine if the observed alteration and mineralization is related to a major VMS mineralizing event.

RECOMMENDATIONS FOR EXPLORATION

Gold

Zones of high heat flow and hydrothermal alteration often accompany gold mineralization. Such zones can be identified by the resultant metamorphic mineral assemblages that develop in response to gold mineralizing conditions. As part of the Discover Abitibi geoscience initiative, Thompson (2002, 2003) has provided preliminary data on a metamorphic study for the Timmins area. Thompson's work will ultimately encompass much of the Abitibi greenstone belt in Ontario. Work to date has identified a biotite metamorphic isograd in the northwest corner of Godfrey Township, coincident with several gold occurrences and carbonate alteration of host rocks. Petrologic evidence in the rocks, when combined with favourable alteration style and the presence of numerous gold occurrences, suggest this area should be re-examined for its economic potential.

Diamonds

Jurassic-aged kimberlites in the Attawapiskat area have been emplaced through Paleozoic cover rocks of the James Bay Lowlands into a subaerial environment. Evidence for this is the preservation of crater facies textures within the Victor kimberlite exhibiting pipe infilling by primary pyroclastic air-fall processes (Webb 2003). The present day bedrock erosional surface in the vicinity of the kimberlites consists of Silurian aged carbonate sediments of the Attawapiskat formation. The presence of Devonian clasts within kimberlites from the Kirkland Lake area suggest the original bedrock surface has been eroded by as much as 200 to 300 m, removing all the pre-existing Devonian rocks subsequent to kimberlite emplacement (McCracken et al. 2000), (see Figure 8). If the Attawapiskat area experienced similar conditions, that post-kimberlite erosion would be a significant source of diamonds to Jurassic and younger paleosurfaces. Paleoplacer diamonds would be distributed seaward from the kimberlites and be deposited in topographic traps such as bedrock valleys and karst depressions in the paleosurface.

Due to their extreme hardness, diamonds naturally survive weathering, winnowing, transportation and deposition processes that rapidly degrade most minerals. Due to their high density (3.52 gm/cm^3), diamonds preferrentially concentrate in a depositional environment. Diamonds eroded from the Attawapiskat kimberlites would be subject to natural sorting and concentrating processes in a placer or placermarine environment. If assumptions regarding the present day erosional level of the Attawapiskat kimberlites are correct, and the vertical distribution of diamonds in the pipes was consistent to that in the preserved portion of the Victor kimberlite, then it follows there should be an equivalent amount of diamonds eroded from the Victor pipe and redistributed in the post-kimberlite environment. Combined with possible diamond contributions from the other pipes of the Attawapiskat field, this represents a very significant quantity of diamonds.

The presence of middle-Jurrassic aged "Mistuskwia Beds" (Telford 1982, Norris 1977) underlying Cretaceous and Cenozoic sediments in the Moose River basin hold promise for paleoplacer diamond deposits. Both Jurassic and younger sediments comprise semi-consolidated to unconsolidated sands, clays and gravels. The Mistuskwia Beds are identified by their Jurrasic palynofloral assemblages and distinct lithological nature. At the only locality of Mistuskwia Beds identified to date, Norris (1977) described these beds as a 16 m sequence of varicoloured clays and thin unconsolidated quartz sand horizons that are overlain by thick Pleistocene till, sand and gravel.

The Mistuskwia Beds present an ideal medium to find placer diamonds eroded from the Attawapiskat kimberlites. Eroded Attawapiskat diamonds might be found in the Mistuskwia Beds, particularly at the base of those sediments. Bedrock traps and gravel-filled karsts may contain concentrations of placer diamonds that escaped redistribution

during Pleistocene glaciation. To test such areas, standard kimberlite indicator mineral surveys may be useful in leading to favourable areas of placer diamonds. Lastly, the possibility of marine diamonds beneath Quaternary marine sediments in the James Bay Lowlands and Hudson Bay Lowlands, both on-shore and off-shore, similar to Namibian placer, paleoplacer and placermarine diamonds should be considered.

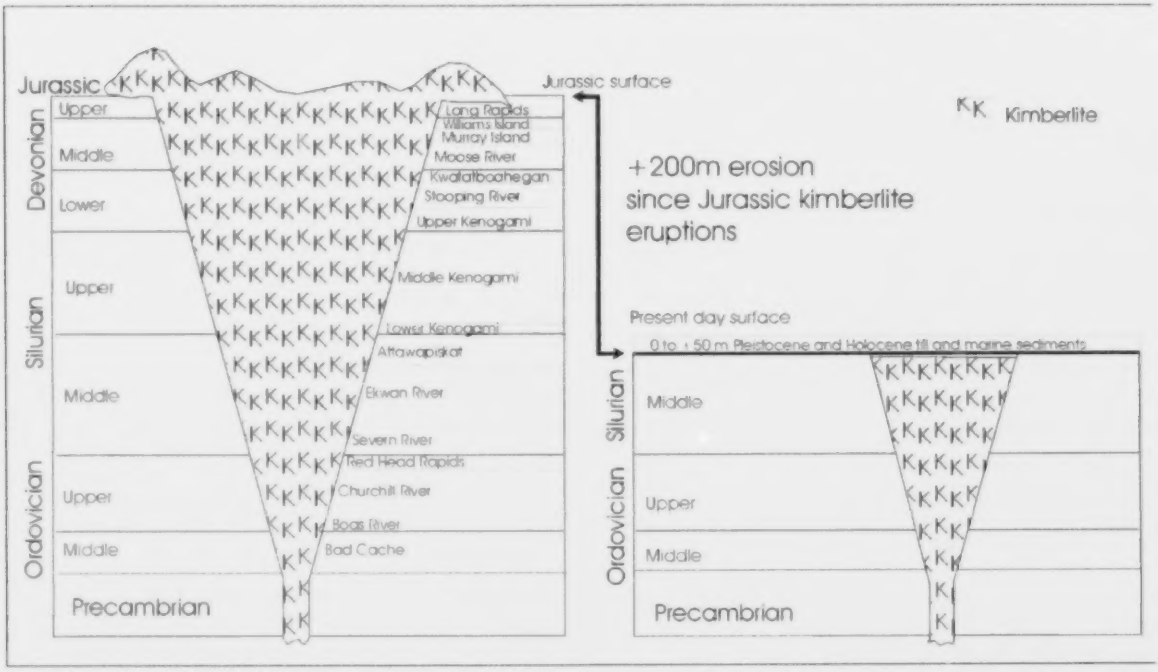

Figure 8. Stratigraphy in the vicinity of the Attawapiskat kimberlites at the time of their emplacement in Jurassic time compared to the present day. Stratigraphic details *modified from* Sanford and Grant (1998), other details *modified from* Webb (2003).

Magmatic and Komatiite-Hosted Ni-Cu

The Timmins area is experiencing a resurgence of exploration for magmatic and komatiite-hosted Ni-Cu deposits. A triangular area, with apexes at Montcalm mine, Montcalm Township, Alexo mine, Dundonald Township and occurrences in Bannockburn Township (Kirkland Lake District) is recognized as having high potential for Ni-Cu mineralization.

Ongoing development of the Montcalm mine, hosted by gabbroic rocks of the Montcalm gabbroic complex, demonstrates the economic viability of that intrusion. The Kamiskotia gabbroic complex, with many similar attributes to the Montcalm gabbroic complex, is a favourable target to explore for additional magmatic sulphide mineralization.

A number of small, komatiite-hosted Ni-Cu deposits around the Shaw dome, south of Timmins, support the prospectivity of those rocks for additional concentrations of nickel and copper. The Halliday Dome, south of Timmins, and the Swayze greenstone belt west of Timmins, host numerous komatiitic and mafic-ultramafic intrusive rocks that deserve re-examination for nickel-copper mineralization in light of the current and projected prices for those metals.

In 1972-73, the Hanna Mining Company conducted a regional copper-nickel lithogeochemistry program on ultramafic rocks in the Timmins District. In 1997, the Timmins Resident Geologist office received, through donation, data related to this project (Assessment File T-3040). Of note, Hanna performed nickel sulphide assays; many samples returned anomalous nickel sulphide values greater than 800 ppm.

In 2002, Ontex Resources Limited completed 13 diamond drill holes on its Faymar property in Deloro Township. One hole, FY-02-02 was targeted at an area of geological, geochemical and geophysical interest. The drill hole intersected 2 zones that returned occurrence-grade platinum group metal (PGM) assays as well as anomalous nickel over narrow widths. Of 4 follow-up diamond drill holes, 1 intersected occurrence-grade PGM mineralization and 2 other holes encountered anomalous PGM mineralization. Ontex's drilling is coincident with an area where Hanna Mining Company reported several nickel sulphide values greater than 800 ppm.

Given Ontex's technical success, it would be a reasonable course of action to further research and explore the many other areas in the Timmins District where Hanna obtained high nickel sulphide assays. One such area is an outcrop area of serpentinite to the north of the Dayton Porcupine No. 1 Zone (*see* "Property Visits").

Volcanogenic Massive Sulphide Cu-Zn-Ag

An interesting mix of felsic to komatiitic volcanic rocks east of Bigwater Lake, Murphy Township may be part of the Kidd Munro assemblage (*see* "Property Examinations"). On the basis of similar lithogies, the presence of copper and zinc mineralization associated with graphitic sediments, the presence of ultramafic to felsic volcanic rocks extending through Murphy and Jessop townships and linking to volcanogenic massive sulphide-bearing rocks in the Kamiskotia area, it is possible that these rocks are the stratigraphic continuation of rocks that host the Kidd Creek mine. Outcrops of sulphide-bearing felsic pyroclastic rocks exposed along the railroad bed in Murphy Township bear similarities to the Kidd Creek mine East Outcrop. Intensely altered volcaniclastic rocks bear similarities to footwall rocks at the South Bay mine at Confederation Lake. Consequently, this area is deemed highly prospective for hosting volcanogenic massive sulphide mineralization. To date, only limited diamond drilling has tested targets in the area. In light of the size and value of the Kidd Creek mine, much more extensive, deep diamond drilling is warranted. However, overlying Porcupine sediments, of unknown thickness, obscure much of the favourable volcanic rocks. Further, structural disruptions attributed to the Burrows-Benedict fault and the Pipestone fault may account for the discontinuous nature of the volcanostratigraphic sequence in west central Murphy Township. It is suggested these "mine sequence rocks" trending through Wark, Murphy and Jessop townships, depicted in Figure 9, should be given the highest priority for Kidd Creek type volcanogenic massive sulphide exploration.

The recent discovery of base metal mineralization beneath the Paleozoic cover rocks of the James Bay lowlands by De Beers Canada Exploration and Spider Resources Ltd./ KWG Resources Inc. joint venture, provides incentive for additional exploration in the lowlands for a variety of mineral commodities. Due to the overburden and Paleozoic cover rocks, detection of new mineral deposits will be more difficult, and their development and extraction more costly. However, the area presents untapped potential for Archean-hosted mineral deposits to those with the initiative to explore and "see through" to the Archean basement rocks in the quest for VMS and gold mineralization.

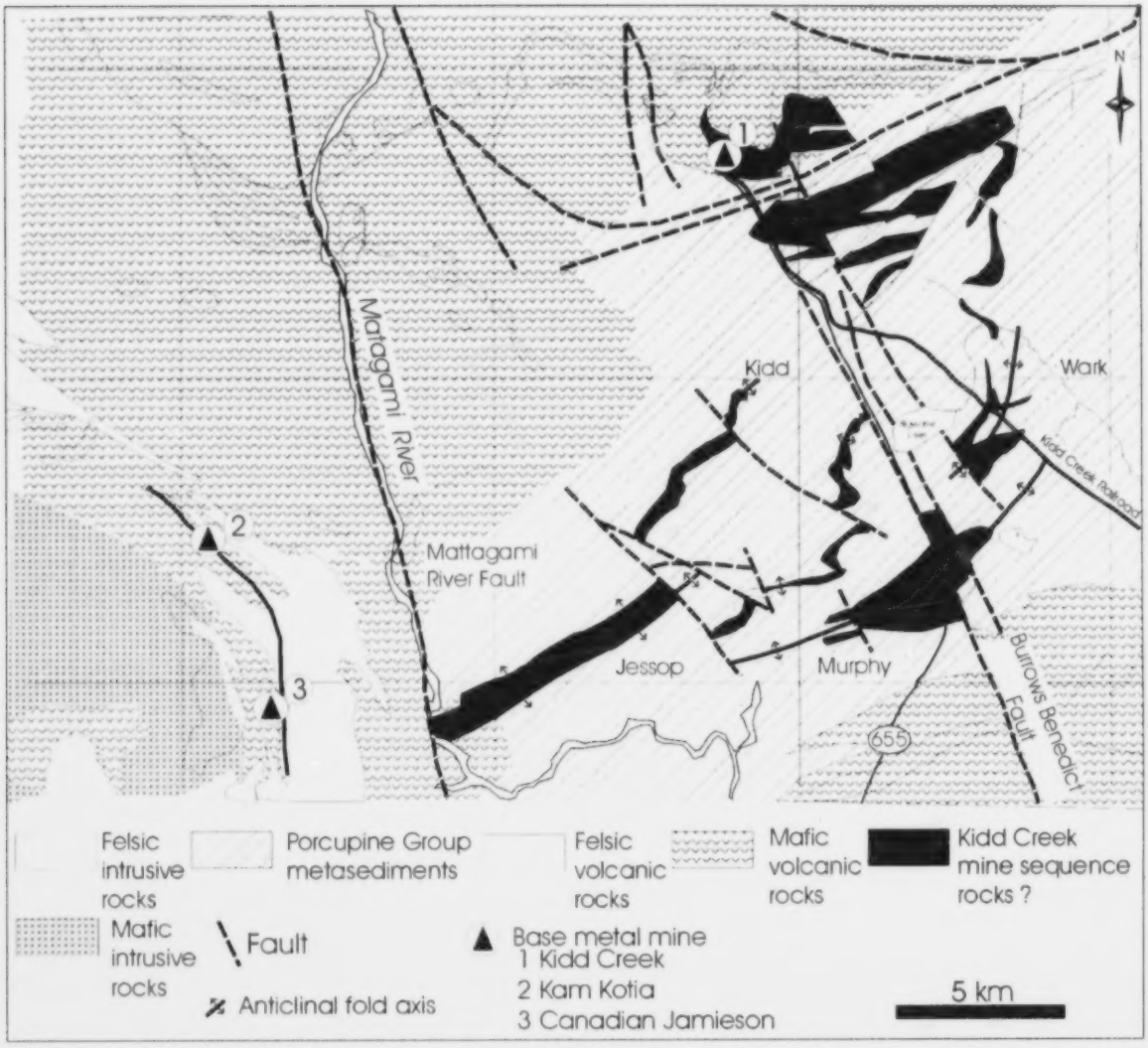

Figure 9. Geology of the Kidd Creek to Kamiskotia area north and west of Timmins, illustrating the distribution of possible Kidd Creek mine sequence rocks extending through Wark, Murphy and Jessop townships. The discontinuous exposures of the mine sequence rocks is the result of overlying Porcupine sediments and subsequent structural disruptions, particularly along the Burrows-Benedict and Mattagami River faults. Block faulting and regional-scale folding account for the present distribution of the geology in the area. Geology *modified from* Ayer and Trowell (1998), and Berger (1999).

OGS ACTIVITIES AND RESEARCH BY OTHERS

A number of mapping and research projects were underway or completed in the Timmins District and are listed below. Details of some of the projects are reported in Summary of Field Work and Other Activities 2003 (Baker et al. 2003).

T.M. Desjardins, Laurentian University, Sudbury, continued her studies on the evaluation of assemblage boundaries in the Michipicoten greenstone belt, through the use of geochemical, petrographic and structural investigations.

M. DeWolfe, Laurentian University, Sudbury, continued M.Sc. research on the stratigraphic and structural setting of the north rhyolite at the Kidd Creek mine in Kidd Township.

E. Dinel, University of Ottawa, continued M.Sc. research on gold mineralization in Timmins.

L.A.F. Hall and M.G. Houlé, Precambrian Section, Ontario Geological Survey, completed 1:20 000 scale geological mapping of Shaw, Eldorado and Adams townships.

S. Hocker, University of Wisconsin Oshkosh, USA, began M.Sc. research on the Genex volcanogenic massive sulphide deposit in Godfrey Township.

N. Lefebvre, University of British Columbia, Vancouver, continued to investigate diamondiferous occurrences found on the GQ Diamond Property in Musquash Township.

P. MacDonald, Laurentian University, Sudbury, did M.Sc. research on the role of porphyry intrusions in gold mineralization in Timmins.

C. Vaillancourt, Precambrian Section, Ontario Geological Survey, commenced a geological investigation of the diamond occurrences in the Wawa area. The 2003 activity consisted of mapping Menzies Township at a scale of 1:20 000.

DISCOVER ABITIBI

Discover Abitibi is a geoscience initiative funded by the Ontario Ministry of Northern Development and Mines - Northern Ontario Heritage Fund, FedNor, the municipalities of Timmins, Black River-Matheson and Kirkland Lake and the private sector including mining and exploration companies and supporting service companies. Discover Abitibi has as its objective the discovery of new mineral deposits in the Abitibi greenstone belt, ultimately leading to the creation of new wealth and jobs. Towards that objective, Discover Abitibi has initiated a number of geoscience projects in the Timmins, Black River-Matheson and Kirkland Lake areas. In collaboration with the Ontario Geological Survey, the Geological Survey of Canada, Laurentian University and the University of Ottawa, a number of geoscience projects are underway or planned.

To date, a number of airborne geophysical surveys have been flown over the Timmins-Kirkland Lake project area. These include MEGATEM® II, Airgrav (gravity) and high resolution magnetic surveys. Also underway are geological investigations of the Abitibi greenstone belt in the heart of the Timmins and Kirkland Lake gold camps. Detailed seismic surveys will be initiated in the near future to assist in the understanding of the geology in the third dimension, to add further guidance in the quest for new mineral deposits.

R. Bateman began the first year of detailed geological investigation of outcrops in the vicinity of the Dome and Pamour mines as part of a program designed to evaluate and document the architecture of the Abitibi greenstone belt in the Timmins area.

B. Hathaway commenced a 2-year mapping program to determine geological, structural and stratigraphic controls on volcanogenic mineralization in the Kamiskotia area.

P. Thompson continued a metamorphic study of the Discover Abitibi area using existing rock thin sections from government survey collections and exploration and mining company sources. Details of the first phase of that investigation established the relationship between high temperature hydrothermal fluid flow and gold mineralization (*see* Thompson 2002, 2003 for details).

Summaries of the Discover Abitibi projects carried out in 2003 are provided in Ontario Geological Survey, Open File Report 6120 (Baker et al. 2003).

ACKNOWLEDGEMENTS

Information on past activities reported in the text are from assessment files and other files of the Timmins Resident Geologist Office unless otherwise noted. Information on current mining and exploration activities was provided by individual prospectors and exploration and mining company personnel, compiled from assessment files and obtained from public information sources.

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Table 15. Assessment files received in the Timmins District in 2003.

Abbreviations

AEM ..... Airborne electromagnetic survey
AM ..... Airborne magnetic survey
ARA ..... Airborne radiometric survey
Beep ..... Beep Mat survey
Bulk ..... Bulk sampling
Comp ..... Compilation
DD ..... Diamond drilling
DGP ..... Down-hole geophysics
GC ..... Geochemical survey
GEM ..... Ground electromagnetic survey
GL ..... Geological Survey
GM ..... Ground magnetic survey
GRA ..... Ground radiometric survey
GPS ..... Global Positioning System
Grav ..... Gravity survey
GT ..... Geotechnical Survey
HLEM ..... Horizontal loop electromagnetic survey
HM ..... Heavy mineral sampling
IM ..... Industrial mineral testing and marketing
IP ..... Induced polarization survey
Lc ..... Linecutting
Met ..... Metallurgical testing
MM ..... Mise à la masse
OD ..... Overburden drilling
ODH ..... Overburden drill hole(s)
PEM ..... Pulse electromagnetic survey
PET ..... Petrography
Photo ..... Photography
Pr ..... Prospecting
RES ..... Resistivity survey
Samp ..... Sampling (other than bulk)
Seismic ..... Seismic survey
SP ..... Self-potential survey
Str ..... Stripping
Topo ..... Topography
Tr ..... Trenching
UG ..... Underground exploration/development
VLEM ..... Vertical loop electromagnetic survey
VLFEM ..... Very low frequency electromagnetic survey

Township or Area	Company Name	Year	Type of Work	AFRO Number	Resident Geologist Office File Designation
Abbie Lake	Garber, R.J.	2002	Pr, GC, Samp, Assay	2.25808	WP Abbie Lake-24
Abotossaway	Algoma Ore Properties, Limited	1958	GL, Assays	Donation	WP Abotossaway-36
Abotossaway	Patricia Mining Corp.	2003	GL, Samp	2.25760	WP Abotossaway-37
Abotossaway	Rand Consolidated	1919	Tr, Other, Core Analysis, Property Report	Donation	WP Abotossaway-38
Abotossaway	Goudreau Gold / Algold / Amhearst Mines	1923-1940	Correspondence, Prospectus	Donation	WP Abotossaway-39
Abraham	Mealey, W.B.	1999	GL	Donation	WP Abraham-8
Adams	Bryant, J.D./Croxall, J.E./Kangas, M.	2003	GC, Samp, Assays	2.26313	T-4898
Aguonie	Alden Iron Range	1913	Tr	Donation	WP Aguonie-12
Andre	Algoma Central Railway	1963	GL, Property report	Donation	WP Andre-1
Bader	Tremblay, M.A.	2001	Pet	2.24460	WP Bader-2
Bader, Echum, Marsh	1447539 Ontario Limited	2001	Str, Pr, Pet	2.24533	WP Bader-3
Bartlett, Geikie	Robitaille, R.R.	2003	Lc, GM, HLEM, GL	2.26089	T-4894
Abotossaway, Aguonie, Bailloquet et al. (21 Twps.)	Algoma Ore Properties, Limited	1953	AM, AM Comp, GL Comp	Donation	WP Bird-4
BMA 523 831	1387197 Ontario Inc.	2002	OD-1-122 ft, GC, HM	2.25542	T-4889
BMA 523 832, BMA 522 832	1387197 Ontario Inc.	2002	OD, GC, HM, Samp, Pr	2.25542	T-4890

Township or Area	Company Name	Year	Type of Work	AFRO Number	Resident Geologist Office File Designation
BMA 523 833, BMA 523 832	1387197 Ontario Inc.	2002	OD, GC, HM, Samp, Pr	2.25542	T-4892
BMA 523 862, BMA 524 862	Aurora Platinum Corporation	2002	AM, AEM	2.26020	T-4874
BMA 524 832	1338756 Ontario Inc.	2002	OD, GC, HM, Samp, Pr	2.25542	T-4887
BMA 524 833, BMA 525 833, BMA 524 832	1387197 Ontario Inc.	2002	GC, HM, Samp Pr, GM, DD-1-81 ft, OD-1-60 ft	2.25542	T-4891
BMA 525 833	1387197 Ontario Inc.	2002	GC, HM, GM	2.24935	T-4819
BMA 525 833	1387197 Ontario Inc.	2002	OD, GC, HM, Samp, Pr	2.25542	T-4886
BMA 525 834, BMA 526 834, BMA 526 833	1387197 Ontario Inc.	2003	OD, Samp, HM, Pet, Assay	2.26322	T-4921
BMA 526 833	1387197 Ontario Inc.	2002	GC, HM, OD	2.24937	T-4821
BMA 526 833	1387197 Ontario Inc.	2002	GC, HM	2.24929	T-4820
BMA 526 833, BMA 525 833	1387197 Ontario Inc.	2002	GC, HM	2.24932	T-4817
BMA 526 833, BMA 527 833	1387197 Ontario Inc.	2002	GC, HM	2.24930	T-4816
BMA 526 834	1387197 Ontario Inc.	2002	GC, HM	2.24937	T-4824
BMA 526 834	De Beers Canada Exploration Inc.	2002	Grav	2.24993	T-4826
BMA 526 834	De Beers Canada Exploration Inc.	2003	DD-2-402 m, GL, GT	2.25614	T-4837
BMA 526 834	1387197 Ontario Inc.	2002-2003	OD, Samp, Pet, Assay	2.26326	T-4918
BMA 526 834, BMA 527 834	1387197 Ontario Inc.	2002	GC, HM	2.24936	T-4823
BMA 526 834, BMA 527 834	1387197 Ontario Inc.	2002-2003	OD, Samp, HM, Pet, Assay	2.26325	T-4922
BMA 527 833	De Beers Canada Exploration Inc.	2003	DD-6-1416 m	2.25928	T-4869
BMA 527 833	1387197 Ontario Inc.	2002	OD, GC, HM, Samp, Pr	2.25542	T-4888
BMA 527 834	De Beers Canada Exploration Inc.	2001	GM, EM	2.24743	T-4784
BMA 527 834	1387197 Ontario Inc.	2002	GC, HM	2.24927	T-4822
BMA 527 834	De Beers Canada Exploration Inc.	2003	DD-8-1232 m, Bulk, Comp, GT	2.25050	T-4852
BMA 527 834, BMA 528 834, BMA 527 841, BMA 528 841	Dumont Nickel Inc.	2003	OD, Samp, Pet, Assay	2.26324	T-4919
BMA 527 853, BMA 525 851, BMA 522 852	KWG Resources Inc.	1994	DD-6-676 m	Donation	T-4885
BMA 527 861, BMA 526 861	De Beers Canada Exploration Inc.	2002	GC, GP, Mag, GEM, DD-2-58 m	2.25123	T-4802
BMA 528 834	1387197 Ontario Inc.	2002	GC, HM	2.24928	T-4818

Township or Area	Company Name	Year	Type of Work	AFRO Number	Resident Geologist Office File Designation
BMA 528 834, BMA 527 834	Waseco Resources Inc.	2002	GP, AM	2.25019	T-4796
BMA 528 834, BMA 527 834	KWG Resources Inc.	2003	Lc, GM	2.26130	T-4938
BMA 528 834, BMA 528 841, BMA 527 834, BMA 526 834, BMA 526 833	Dumont Nickel Inc.	2001	DD-2-229 m, GL, GT, Photo	2.25195	T-4860
BMA 528 841	Dumont Nickel Inc.	2003	OD, Samp, Pet, Assay	2.26323	T-4920
Bonar	876097 Alberta Limited	2003	AEM, AM	2.26651	T-4927
Boyle, McKnight	Northern Shield Resources Inc.	2001	Samp, HM, GL, GM, DD-2-100 m	2.25579	T-4872
Bradley	Opazatica Iron Mines Limited	1951	Pr, Assays	Donation	T-4833
Bristol	Poirier, R.J.	2003	GM	2.26025	T-4873
Bristol Twp.	Cameco Gold Inc.	2002	DD-15-5609 m, Samp	2.24662	T-4780
Bristol, Carscallen, Denton, Thorneloe	Band-Ore Resources Ltd.	2002	43-101 Technical Report	Donation	T-4787
Bullock, Redsky, Restoule, Naveau, Nebonaionquet, Maness, Michano, Esquega, Fiddler, Isaac	Transgold Resources Ltd.	1987	GL, AM, Comp	Donation	WP Bullock-2
Byers, Loveland	Moneta Porcupine Mines Inc.	2003	GM	2.25717	T-4841
Byers, Loveland	Gervais, L.N.	2003	GM	2.25706	T-4847
Camp Lake Area	Big Dave Iron Property	1911	Property description	Donation	WP Camp Lake-10
Casselman	Hinzer, J.	2002	KIM	2.24801	T-4795
Chabanel	Ross-Arnott Claims	1909-1911	GL, Samp	Donation	WP Chabanel-59
Chabanel	Goetz Claims Mildred and Brooks Lake Lucy Property	1911	GL	Donation	WP Chabanel-60
Chabanel	Algoma Ore Properties, Limited	1947	GL	Donation	WP Chabanel-54
Chabanel	Algoma Ore Properties, Limited	1967	EM, GM	Donation	WP Chabanel-55
Chabanel	Algoma Ore Properties, Limited	1927-1963	Correspondence	Donation	WP Chabanel-56
Chabanel	Algoma Ore Properties, Limited	1899-1927	Correspondence	Donation	WP Chabanel-57
Chabanel	Algoma Ore Properties, Limited	1961	DD, OD	Donation	WP Chabanel-62
Chabanel	Algoma Ore Properties, Limited	1958	GL, Pr	Donation	WP Chabanel-63
Chabanel	Algoma Ore Properties, Limited	1952-1953	Grav, GM, Correspondence	Donation	WP Chabanel-64
Chabanel	Algoma Ore Properties, Limited	1944	DD-3-2608 ft, Assays	Donation	WP Chabanel-66
Chabanel	Algoma Ore Properties, Limited	1958-1969	Correspondence, Taconite Assessment, DD-23, Assays	Donation	WP Chabanel-67
Chabanel	Algoma Ore Properties, Limited	1912	Pr, GL	Donation	WP Chabanel-68

Township or Area	Company Name	Year	Type of Work	AFRO Number	Resident Geologist Office File Designation
Chabanel, Esquega	Goetz Claims Mildred and Brooks Lake Lucy Property	1912	GL, Samp, Tr, Assays, Pr	Donation	WP Chabanel-61
Chabanel, Esquega	Jones & Laughlin Steel	1950	Pr, GL, Comp	Donation	WP Chabanel-65
Chabanel, Esquega, Corbiere, McMurray	Algoma Ore Properties, Limited	1965	GL, Assays, Comp, Other	Donation	WP Esquega-33
Chester	Northville Gold Corporation	2001-2002	43-101 Technical Report	Donation	T-4788
Chester	Young-Shannon Gold Mines, Limited	2002	DDH-1-1500 ft	2.25221	T-4810
Chester	Young-Shannon Gold Mines, Limited	2002	DD-5-4050 ft	2.24998	T-4814
Chester	Young-Shannon Gold Mines, Limited	2002	DD-1-500 ft	2.25806	T-4849
Chester	Young-Shannon Gold Mines, Limited	2002	DD-2-1105 ft	2.25744	T-4850
Clay, Howells	Hans Lundberg Exploration Company	1955	DDH-2-1287 ft, Samp, Assay	Donation	T-4831
Clergue	Explorers Alliance Corporation	1999	Assays, DD-8-1644 m	2.25676	T-4845
Cody	Evans, S.W. and Associates	1980	GL	Donation	T-4859
Corbiere	Josephine Iron Mine	1945	Survey plan	Donation	WP Corbiere-21
Corbiere	Pioneer Gold Mines of B.C. Limited	1941	Property report	Donation	WP Corbiere-22
Corbiere	Brennan/McLean/Tait	1922	Correspondence	Donation	WP Corbiere-23
Corbiere, Esquega, Abotossaway, Rabazo, Jacobson, Lalibert, McMurray	Algoma Central Railway	1960-1961	Exploration updates, Correspondence, Assays	Donation	WP Corbiere-24
Cowie	Algoma Ore Properties, Limited	1913-1928	Pr, Tr, GL, Correspondence	Donation	WP Cowie-8
Cowie	Michael-Boyle property	1927-1934	Property Report	Donation	WP Cowie-9
Cunningham	A.A. McLaren	1910	Pr	Donation	T-4835
Debassige	Algoma Steel Corporation	1979	Assays, GL	Donation	WP Debassige-08
Deloro	Placer Dome (CLA) Limited	2002	DD-3-1607 ft	2.24714	T-4781
Deloro	Placer Dome (CLA) Limited	2002	DD-4-1015.80 ft	2.24620	T-4782
Deloro	Globex Mining Enterprises Inc.	2002	GM	2.24776	T-4789
Deloro	Ontex Resources Limited	2002	DH-13-2413 m	2.25148	T-4803
Deloro	Ontex Resources Limited	2002-2003	Pr, GL, Samp, Assay	2.26677	T-4930
Deloro, Ogden	L.B.L. Richgold Mines Incorporated	2003	Beep, Samp, GL, Assay, Pr	2.26090	T-4914
Denton	Bonhomme, J.-C.	2003	DD-1-51 m, Samp	2.26129	T-4881
Denton	Bonhomme, J.-C.	2002	DD-1-93 m, Assays	2.26613	T-4926
Dolson, Echum	Robert, J. / Tremblay, M.A.	2002	Pr, Samp, Pet	2.25852	WP Dolson-6
Dundonald	Vision Exploration	2002	GM	2.24730	T-4792
Dundonald	Markes, W.E.	1942	Correspondence, Assays	Donation	T-4925
Dunphy	Dreany Iron Claims	1912	GL	Donation	WP Dunphy-4
Dupuis	Dewdney, P.N.	2002	GC, Assay, Samp	2.25161	T-4861
Eilber	Northern Shield Resources Inc.	2001	Samp	2.25190	T-4808

Township or Area	Company Name	Year	Type of Work	AFRO Number	Resident Geologist Office File Designation
Eldorado	Davis, P.C.	2002	DD-6-471 m, GT	2.25349	T-4827
Eldorado	2004428 Ontario Inc.	2003	UTEM, GM	2.25830	T-4917
Esquega	Algoma Ore Properties, Limited	1940	GL	Donation	WP Esquega-32
Esquega	Firespur Exploration Ltd.	1980	GM, VLFEM, Str, GL	Donation	WP Esquega-34
Finan	Algoma Central Railway	1961	Samp, Other (chemical analysis)	Donation	WP Finan-74
Finan	Cline Lake Gold Mines Limited	1939-1941	Correspondence	Donation	WP Finan-75
Franchere	Algoma Steel Exploration Ltd.	1943-1944	Assays, Correspondence	Donation	WP Franchere-13
Franchere	Pioneer Gold Mines of B.C. Limited	1942	Property Report, GL, Pr, Correspondence	Donation	WP Franchere-14
Fripp, Musgrove	Daxl, H.	2002	Beep, Samp	2.24758	T-4800
Garnet	Mortimer, C.H.	2001-2002	DDH-1-240 ft, Tr, Str, Samp	2.24449	T-4801
Genoa, Marion	Central Sudbury Lead-Zinc	1952, 1957-58	Property reports	Donation	T-2158
German	Placer Dome (CLA) Limited	2003	OB 8-123 m, GT	2.25803	T-4855
Giles	Algoma Central Railway	1961	Pr, Property description	Donation	WP Giles-001
Godfrey	Falconbridge Limited	2003	GC, Assay	2.26479	T-4907
Goodwillie	Algoma Central Railway	1960	Pr, Property description	Donation	WP Goodwillie-002
Goodwillie	Algoma Central Railway	1961	Pr, Property description	Donation	WP Goodwillie-001
Grootenboer	Algoma Central Railway	1961	Pr, Property description	Donation	WP Grootenboer-001
Groseilliers	Dog River Iron Claims	1910	Property visit	Donation	WP Groseilliers-16
Grzela	Algoma Central Railway	1961	Pr, Property description	Donation	WP Grzela-001
Hadley	Algoma Central Railway	1961	Pr, Property description	Donation	WP Hadley-001
Hallett	Algoma Central Railway	1961	Property description, Pr	Donation	WP Hallet-001
Halliday, Midlothian	Canadian Arrow Mines Limited	2001	DD-10-2018 m	2.25718	T-4840
Hawkins	McKinnon, D.	2003	Str, GL, Tr	2.25874	WT Hawkins-33
Horwood	Hedman Resources Limited	2000	Str	2.24434	T-4790
Huffman	Brady, J.G.	2002	Lc, Beep, EM	2.24040	T-4794
Irving	Algoma Central Railway	1961	Pr, Property description	Donation	WT Irving-3
Jacobson	Algoma Ore Properties, Limited	1958	Tr, Pr, Other (property visit)	Donation	WP Jacobson-78
Jacobson	Edwards, J.	1923-1927	Correspondence, Assays	Donation	WP Jacobson-79
Jacobson	Cline Lake Gold Mines Limited	1923-1941	Correspondence, Annual reports	Donation	WP Jacobson-81
Jacobson	Markes Mines Ltd.	1934-1936	Correspondence, Assays, GL, Tr	Donation	WP Jacobson-80
Jacobson	Cline Lake Gold Mines Limited	1937-1938	DD-13-4942 ft, GL, Assay	Donation	WP Jacobson-82
Keefer	Galata, F.	2003	Str, Tr, Samp, GL	2.25863	T-4856
Keefer	Galata, F.	2002	GL, Assays, Samp	2.25697	T-4858
Keefer	Galata, F.	2000-2001	GL, Comp, TEM, DGP, HLEM, GM	2.26380	T-4899

Township or Area	Company Name	Year	Type of Work	AFRO Number	Resident Geologist Office File Designation
Keefer	Galata, F.	2001	TEM, DD-3-1601 ft, Assays, Samp	2.26364	T-4902
Keefer	Galata, F.	2002	DGP	2.26445	T-4904
Keith	Ross, George	2002	GL, Beep, Assays	2.24957	T-4815
Killins	Frances Gold Mines, Ltd.	1908-1909	GL	Donation	WP Killins-4
Abotossaway, Corbiere, Chabanel, et al. (14 Twps.)	Jalore Mining Company	*1950	AM, GL, Pr	Donation	WP Killins-5
Lamarche	Lavoie, Michel	2001	DD-1-490 ft	2.25696	T-4761
Langmuir	Davis, P.C.	2003	VLFEM, GM, Lc	2.25714	T-4846
Langmuir	2004428 Ontario Inc.	2002	DD-1-900 ft, GL, Comp, Assays	2.25625	T-4895
Langmuir	2004428 Ontario Inc.	2003	GM, Lc	2.26448	T-4905
Langmuir	2004428 Ontario Inc.	2003	DD-2-323 m	2.26596	T-4933
Langmuir, Eldorado	Starfire Minerals Inc.	2003	DD-5-1023 m, Assays, GL	2.25864	T-4871
Leclaire	Gibson and Blackinton Claims	1910-1912	GL	Donation	WP Leclaire-9
Leclaire	Alice Iron Range Blackinton Property	1909-1911	DD, Property description	Donation	WP Leclaire-8
Abotossaway, Aguouie, Bird, et al. (22 Twps.)	Jalore Mining Company	1948-1951	GL, Pr, GM (Dip Needle)	Donation	WP Lendrum-36
Lizar	Freewest Resources Canada Inc.	2002	AM, AEM	2.25102	WT Lizar-24
Lizar	Algoma Ore Properties, Limited	1958	GL, GEM, GM	Donation	WT Lizar-25
Lizar	Beaufield Consolidated Resources Incorporated	2002	GL, Comp, Lc, GM	2.26008	WT Lizar-26
Loveland	Meunier, D.	2002	DGP, EM	2.24861	T-4797
Loveland	Meunier, D.	2002	Str	2.25211	T-4809
Loveland	Meunier, D.	2003	DGP	2.25763	T-4839
Loveland	Falconbridge Limited	2000	DD-3-591 m	2.25689	T-4838
Loveland	Meunier, D.	2003	GM	2.25799	T-4848
Loveland	Meunier, D.	2003	Str, GL	2.25513	T-4868
Loveland	Meunier, D.	2003	Str	2.26146	T-4880
Loveland	Meunier, D.	2003	Lc, Str, GL	2.26566	T-4915
Loveland	Meunier, D.	2003	GL, Samp, Assays (Re-assay of DD core LDM99-2)	2.26050	T-4916
Loveland	Meunier, D.	2003	DD-1-330 m	2.26678	T-4932
Macklem	Asarco Exploration Company of Canada Limited	1981	GL, Other, Assays	Donated	T-4863
Macklem	Echo Bay Mines Ltd.	2003	DD-2-355 m, Samp, Assay	2.26456	T-4883
Macklem	Echo Bay Mines Ltd.	2003	DD-18-3836 m, Assays, GL	2.26428	T-4906
Mahaffy	Falconbridge Limited	2002	HLEM, GM	2.26079	T-4878
Mahaffy, Reid	Falconbridge Limited	2002	HLEM, Lc, GM	2.26429	T-4912

Township or Area	Company Name	Year	Type of Work	AFRO Number	Resident Geologist Office File Designation
Mallard	Morin, R.J.	2002	Pr, Samp	2.25727	T-4844
Mann and Duff	Broadlands Resources Ltd.	2001	GL, GM, IP	2.23925	T-4785
Mann, Duff	Broadlands Resources Ltd.	2001	DD-6-998 m, IP, GM, GL, Samp	2.24754	T-4799
Marion	Yvon, M.G.	2002	Lc, GM, IP, Tr	2.24965	T-4798
Marion, Genoa	Algoma Ore Properties, Limited	1952-53, 1956	Correspondence	Donation	T-2158
Marion, Genoa	Central Sudbury Lead-Zinc	1953	Correspondence, Assays, DD	Donation	T-2158
McKnight, Hillmer	Northern Shield Resources Inc.	2001	GM, Samp	2.25082	T-4807
McMurray	Parkhill Gold Mines Ltd.	1931-1939	UG plans, GL, Correspondence, Prospectus	Donation	WP McMurray-92
McMurray	Minto Gold Mines Ltd.	1935-1941	Correspondence	Donation	WP McMurray-89
McMurray	Darwin Gold Mines Ltd.	1925-1938	Correspondence, Prospectus	Donation	WP McMurray-88
McMurray	Hillside Gold Mines	1934-1939	Correspondence, Assays, GL	Donation	WP McMurray-90
McMurray	Algoma Ore Properties, Limited	1924, 1951	Correspondence, DD, Assays, GL	Donation	WP McMurray-91
McMurray	Booth, A.E.	2002-2003	Beep, Pr, Samp, Assay	2.25872	WP McMurray-93
McMurray	Mackey Point Syndicate	1932-1937	Correspondence, Prospectus	Donation	WP McMurray-94
McNaught	W. McVittie	1910	Pr, Assay, GL	Donation	T-4836
McNaught	McVittie	1939	Correspondence	Donation	T-4924
Meath	Gold Insight Resources Ltd.	2002	Tr, Samp	2.24325	WP Meath-15
Menzies	Brant Lake Iron Prospect	1910-1912	GL, Assays	Donation	WP Menzies-2
Michie	Fekete, M.A.	2002	GC	2.24771	T-4812
Michipicoten Island	The Algoma Steel Corporation, Limited	1942	Other	Donation	WP Michipicoten Island-5
Michipicoten Island	Ministry Of Natural Resources	1942	Other (Island claim map from 1942)	Donation	WP Michipicoten Island -05
Montcalm, Strachan	Falconbridge Limited	2002	HLEM, GM, EM	2.24676	T-4783
Mosambik	Algoma Ore Properties, Limited	1956	GEM	Donation	WP Mosambik-0001
Mosambik	Algoma Ore Properties, Limited	1956	GEM	Donation	WP Mosambik-0002
Nebonaionquet	Anjigomi Iron Property	1908-1912	GL	Donation	WP Nebonaionquet-4
North Chabbie Lake	Eastmain Resources Inc.	2001	DD-5-970 m, Assays	2.25487	T-4828
North of Feagan Lake, North of Rowlandson	Gowest Amalgamated Resources Ltd.	2002	AM, AEM, DD-2-541 m	Donation	T-4876
Nursey	Salo, L.J.	2002	Pr, AEM, GL, Samp	2.24391	T-4791
Osway	Eddy Forest Products Limited	1974	DD-21-6000 ft, Assays	Donation	T-4830
Penhorwood	La société de gestion Maskours inc.	2001	GL, Str, Tr, Bulk, Photo, Topo	2.26121	T-4903
Price	Kinross Gold Corporation	2003	DD-3-500 m, Samp, Assays	2.26105	T-4897
Price, Thorneloe, Ogden	Placer Dome (CLA) Limited	2002	Samp	2.24849	T-4806

Township or Area	Company Name	Year	Type of Work	AFRO Number	Resident Geologist Office File Designation
Prosser	Falconbridge Limited	2002	DD-7-260 m	2.25771	T-4851
Rabazo	Konig, U.	2000-2002	Str, Tr, DD	2.24214	WP Rabazo-41
Rabazo	Konig, U.	2003	Str, Samp	2.26286	WP Rabazo-42
Rabazo	Ranson Mines Ltd.	1938-1939	Correspondence, Property Sketch	Donation	WP Rabazo-43
Reid	Meunier, D.	2001-2003	GM	2.25130	T-4804
Reid	Comaplex Minerals Corp.	2002	DD-8-765 m, Samp, Assays	2.25862	T-4857
Reid	Falconbridge Limited	2002	DD-2-438 m, Assays	2.25840	T-4864
Reid	Comaplex Minerals Corp.	2002	HLEM, Lc, GM	2.26429	T-4908
Reid	Falconbridge Limited	2002	HLEM, Lc, GM	2.26429	T-4909
Reid	Falconbridge Limited	2002	HLEM, Lc, GM	2.26429	T-4910
Reid	Falconbridge Limited	2002	HLEM, Lc, GM	2.26429	T-4911
Reid	Falconbridge Limited	2002	DD-1-241 m, Assays	2.26810	T-4937
Reid, Carnegie	Falconbridge Limited	2002	DD-2-476 m, Assays	2.25962	T-4866
Robb	Kerr, G.	2003	Str	2.26111	T-4877
Scholfield, Ebbs	Fournier, G.	2002	OD-29-281 m	2.24658	T-4829
Semple	Bryant, J.D./Croxall, J.E./Kangas, M.	2003	GC (MMI), Samp, Assay	2.26285	T-4896
Sewell	Maple Minerals Corp.	2003	DD-3-729 m	2.25318	T-4825
Sewell, Reeves, Kenogaming, Penhorwood	Maple Minerals Corp.	2003	DD-3-729 m, GL, Assays, GL, Comp	2.25945	T-4867
Shaw	Cole, B.L.	2002	GL	2.24824	T-4793
Shaw	Cole, B.L.	2003	Lc, IP, VLFEM, GM	2.26390	T-4900
Sheldon, Marceau	Inco Limited	2003	GM, DD-2-339 m	2.25911	T-4865
Sheraton	Falconbridge Limited	2002	DD-2-442 m, Assays, GM, HLEM	2.25953	T-4870
Sheraton	Cross Lake Minerals Ltd.	2002	DD-2-382 m	2.26060	T-4875
Sheraton	Cross Lake Minerals Ltd.	2002	GM, HLEM	2.26059	T-4879
Sheraton, Timmins	Cross Lake Minerals Ltd.	2002	HLEM, GM, DD-80-30,974 m	Donation	T-4779
South of Ridge Lake Area	MCK Mining Corp.	2002	DD-6-943 m	2.24839	T-4805
Sunday Lake Area, Hopper Lake Area	Boliden Westmin (Canada) Limited	2003	DD-8-1532 m, Samp, Assay	2.26153	T-4882
Swayze	Scott, D.S.	2003	Lc, GM	2.25277	T-4813
Swayze, Rollo	Alliance Explorations Incorporated	2003	Pr	2.26206	T-4884
Thornloe	Band-Ore Resources Ltd.	2003	DD-1-164 m, Assay	2.26660	T-4931
Tisdale	Moneta Porcupine Mines Inc.	2002	Str, Tr, Samp	2.24873	T-4811
Tisdale	Caron, M.G.	2003	GL	2.25753	T-4842
Tolmie	Belmont Resources Inc.	2003	DD-1-283 m, Assays, GPS	2.25868	T-4854

Township or Area	Company Name	Year	Type of Work	AFRO Number	Resident Geologist Office File Designation
Tolmie	Belmont Resources Inc.	2003	GM, GEM, Photo	2.25813	T-4853
Tolmie	Belmont Resources Inc.	2003	GM, VLFEM	2.26767	T-4934
Tolmie	Belmont Resources Inc.	2003	DD-1-152.5 m, Assays	2.26766	T-4935
Tully	Placer Dome (CLA) Limited	2002	DD-6-1134.71 m	2.24713	T-4786
Turnbull	Rousseau, M.A./Morais, M.D.	2001	Str, Assay	2.25922	T-4913
Turnbull	Rousseau, M.A./Morais, M.D.	2002	DD-2-102 m, GL, Pr, Assay	2.26333	T-4928
Wacousta	McKinnon, D.	2003	Str, GL	2.26650	T-4929
Whitney	Wabigoon Resources	1983, 1986	DD, Assay, Samp	Donation	T-4832
Whitney	Caron, M.	2003	GL	2.25753	T-4843
Whitney	2004428 Ontario Inc.	2003	GM	2.25859	T-4862
Whitney	Porcupine Lake Gold Mines		UG, DD	Donation	T-4893
Whitney	2004428 Ontario Inc.	2003	GM, Lc	2.25957	T-4834
Whitney	2004428 Ontario Inc.	2003	Tr, GL	2.26386	T-4901
Whitney	Croxall, J.E.	2003	Str	2.26632	T-4923
Whitney	Robert, J.	2003	GL	2.26192	T-4936

Table 16. Publications received by the Timmins Regional Resident Geologist's Office in 2003.

Title	Author	Type and Year of Publication[1]
The Pamour One mine-site investigation, Timmins, Ontario	Aitken, S.A.	M.Sc. Thesis, 1994
Report of Activities 2002, Resident Geologist Program, Timmins Regional Resident Geologist Report: Timmins and Sault Ste. Marie Districts	Atkinson, B.T., Hailstone, M., Seim, G.Wm., Wilson, A.C., Draper, D.M., Farrow, D., Hope P. and Koroschetz, A.M.	OGS Open File Report 6113
PPDA/CIM Ore Deposits at Depth 2003: Kidd Creek Mine, La Ronde Mine, Craig Mine and surrounding areas	Atkinson, B.T., Seim, G.Wm. and Santaguida, F., eds.	Field Guide
Geological compilation of the MATACHEWAN AREA, Abitibi greenstone belt	Ayer, J.A., Trowell, N.F., Josey, S., Nevills, M. and Valade, L.	OGS MAP P.3527
Geological compilation of the Matachewan area, Abitibi greenstone belt [CD]	Ayer, J.A., Trowell, N.F., Josey, S., Nevills, M. and Valade, L.	OGS Dataset MRD 094
Summary of Field Work and Other Activities, 2003	Baker, C.L., Kelly, R.I., Parker, J.R., Ayer, J.A. and Easton, R.M., eds.	OGS Open File Report 6120
The Neoarchean Rice Lake batholith and its place in the tectonomagmatic evolution of the Swayze and Abitibi granite-greenstone belts, Northeastern Ontario	Becker, J.K. and Benn, K.	OGS Open File Report 6105
Fertile peraluminous granites and related rare-element mineralization in pegmatites, Superior Province, NW & NE Ontario	Breaks, F.W., Selway, J.B. and Tindle, A.G.	OGS Open File Report 6099 *
Overview of trends in Canadian mineral exploration, 2002	Canadian Intergovernmental Working Group on the Mineral Industry	Text/Report, 2002
Program: CIM, Montreal, 2003 – 105th Annual General Meeting	CIMM	Convention/Symposium

Title	Author	Type and Year of Publication[1]
GAC/MAC 86, Field Trip 5: Timmins Ontario – Exceptional exposures of Archean subaerial and shallow subaqueous volcanic rocks and associated ore deposits	Comba, C.D.A., Binney, W.P., Stewart, R.D., et al.	Field Guide, 1986
Preliminary results from the James Bay Lowland indicator mineral sampling program	Crabtree, D.C.	OGS Open File Report 6108 *
Preliminary indicator mineral results from the James Bay Lowland sampling program [diskette]	Crabtree, D.C.	OGS Dataset MRD 119 *
Results of the "Spider 3" regional kimberlite indicator mineral and geochemistry survey carried out in the vicinity of the Upper Attawapiskat and Ekwan Rivers, Northern Ontario	Crabtree, D.C. and Gleeson, C.F.	OGS Open File Report 6097 *
Indicator mineral and geochemical data, "Spider 3" regional survey, Upper Attawapiskat and Ekwan rivers, Northern Ontario [diskette]	Crabtree, D.C. and Gleeson, C.F.	OGS Dataset MRD 109 *
Report of Activities 2002, Resident Geologist Program, Regional Land Use Geologist Report: Northwestern, Northeastern and Southern Ontario Regions	Debicki, R.L., Drost, A.P., Hinz, P., Rowell D.J. and Yule, G.R.	OGS Open File Report 6116
Discover Abitibi Initiative, Project report, Airborne Gravity Evaluation Survey, Timmins, Ontario	Elieff, S., and Sander Geophysics Limited	2003
The petrology and geochemistry of Proterozoic ultrapotassic, diamond-bearing lamprophyre dikes of the Gibson-MacQuoid Lake Belt, District of Keewatin, NWT	Habib, S.	M.Sc. Thesis, 1998
Precambrian Geology, DELORO TOWNSHIP	Hall, L.A.F., MacDonald, C.A. and Dinel, E.R.	OGS MAP P.3528
Dayohesssarah Lake area high density regional lake sediment and water geochemical survey, NE Ontario	Jackson, J.E.	OGS Open File Report 6103
Lake sediment and water geochemical data from the Dayohesssarah Lake area, NE Ontario [2 diskettes]	Jackson, J.E.	OGS Dataset MRD 116
Precambrian Geology, SHINING TREE AREA	Johns, G.W.	OGS MAP P.3521
Precambrian Geology, SHINING TREE SOUTH AREA	Johns, G.W.	OGS MAP P.3531
Precambrian Geology Compilation Series – HORNEPAYNE SHEET	Johns, G.W. and McIlraith, S.	OGS MAP 2668 *
Precambrian Geology Compilation Series – SAULT STE. MARIE – BLIND RIVER SHEET	Johns, G.W., McIlraith, S. and Muir, T.L.	OGS MAP 2670 *
Precambrian Geology Compilation Series – LONGLAC SHEET	Johns, G.W., McIlraith, S. and Stott, G.M.	OGS MAP 2667 *
VIIIth International Kimberlite Conference, June-July 2003 [CD]	Kjarsgaard, B.A., ed.	Field Guide
The geology and alteration associated with the Genex volcanogenic Cu massive sulphide deposit, Godfrey Township, Timmins	Legault, M. H.	M.Sc. Thesis, 1985
Report of Activities 2002, Resident Geologist Program, Red Lake Regional Resident Geologist Report: Red Lake and Kenora Districts	Lichtblau, A., Ravnaas, C., Storey, C.C., Raoul, A. and Kosloski, L.	OGS Open File Report 6110
Report of Activities 2002, Resident Geologist Program, Thunder Bay North Regional Resident Geologist Report: Thunder Bay North District	Mason, J.K., White, G.D., O'Brien M.S. and Komar, C.	OGS Open File Report 6111
Report of Activities 2002, Resident Geologist Program, Kirkland Lake Regional Resident Geologist Report: Kirkland Lake and Sudbury Districts	Meyer, G., Cosec, M., Grabowski, G.P.B., Guindon, D.L., Beauchamp S. and Chaloux, E.C.	OGS Open File Report 6114

Title	Author	Type and Year of Publication[1]
WAWA gneiss terrane, Kapuskasing Structural Zone, Chapleau	Moser, D.E.	GSC OFM 2056, 1989
1:250,000 Bedrock Geology of Ontario [CD]	OGS	OGS Dataset MRD 126
Ontario Airborne Geophysical Surveys, Magnetic Data, Process Data and Derived Products: Magnetic Supergrids [2 CDs, GEOSOFT® format]	OGS	OGS Dataset GDS 1037b *
FORT HOPE AREA (East Half) Airborne magnetic survey: Residual magnetic field and Keating coefficients	OGS	OGS MAPS 82 253 – 82 256; 82 260 – 82 262; 82 267 – 82 269; 82 275 & 82 276
FORT HOPE AREA (East Half) AMEM Survey: Shaded image of the second vertical derivative of the magnetic field and Keating coefficients	OGS	OGS MAPS 82 282 – 82 285; 82 289 – 82 291; 82 296 – 82 298; 82 304 & 82 305
Kenogami River Aeromagnetic Survey--Grid and Profile Data [CD]	OGS	OGS Dataset GDS 1227
Nagagami - Squirrel - Wakashi Rivers Area--Purchased Data (Mag, Grid & Profile data) [CD]	OGS	OGS Dataset GDS 1225
Albany - Atikameg - Attawapiskat Rivers Area – Purchased Data (Mag, Grid & Profile data) [CD]	OGS	OGS Dataset GDS 1212
Attawapiskat Area – Purchased Data (Mag, Grid Data) [CD, GEOSOFT® format]	OGS	OGS Dataset GDS 1211b
Attawapiskat Area – Purchased Data (Mag, Profile data) [CD, GEOSOFT® format]	OGS	OGS Dataset GDS 1211d
Geological and lithogeochemical data from mafic-ultramafic bodies in Ontario as a guide to exploration for platinum group element (PGE) deposits	OGS	OGS Dataset MRD 115, 2002 *
KAMISKOTIA AREA MEGATEM® II Survey: Magnetic residual total field contours with EM anomalies and flight path	OGS / Discover Abitibi	OGS MAPS 81 753 – 81 755
KAMISKOTIA AREA MEGATEM® II Survey: Residual magnetic field and EM anomalies	OGS / Discover Abitibi	OGS MAP 81 756
KAMISKOTIA AREA MEGATEM® II Survey: Shaded colour, second vertical derivative magnetic field with Keating correlation coefficient anomalies	OGS / Discover Abitibi	OGS MAP 81 757
KAMISKOTIA AREA MEGATEM® II Survey: Apparent conductance and EM anomalies	OGS / Discover Abitibi	OGS MAP 81 758
KAMISKOTIA AREA MEGATEM® II Survey: EM decay constant (tau) and EM anomalies	OGS / Discover Abitibi	OGS MAP 81 759
Kamiskotia MEGATEM® II Survey, grid and vector data (Geosoft format) [CD]	OGS / Discover Abitibi	OGS Dataset GDS 1042b
Kamiskotia MEGATEM® II Survey, profile data [CD, GEOSOFT® format]	OGS / Discover Abitibi	OGS Dataset GDS 1042d
HALLIDAY DOME AREA MEGATEM® II Survey: Magnetic residual total field contours with EM anomalies and flight path	OGS / Discover Abitibi	OGS MAPS 81 760 – 81 763
HALLIDAY DOME AREA MEGATEM® II Survey: Residual magnetic field and EM anomalies	OGS / Discover Abitibi	OGS MAP 81 764
HALLIDAY DOME AREA MEGATEM® II Survey: Shaded colour, second vertical derivative magnetic field with Keating correlation coefficient anomalies	OGS / Discover Abitibi	OGS MAP 81 765
HALLIDAY DOME AREA MEGATEM® II Survey: Apparent conductance and EM anomalies	OGS / Discover Abitibi	OGS MAP 81 766

Title	Author	Type and Year of Publication[1]
HALLIDAY DOME AREA MEGATEM® II Survey: EM decay constant (tau) and EM anomalies	OGS / Discover Abitibi	OGS MAP 81 767
Halliday Dome MEGATEM® II Survey, Grid and vector data [CD, GEOSOFT® format]	OGS / Discover Abitibi	OGS Dataset GDS 1043b
Halliday Dome MEGATEM® II Survey, Profile data [CD, GEOSOFT® format]	OGS / Discover Abitibi	OGS Dataset GDS 1043d
KIDD - MUNRO, BLAKE RIVER AREA MEGATEM® II Survey: Magnetic residual total field contours with EM anomalies and flight path	OGS / Discover Abitibi	OGS MAPS 81 768 – 81 779
KIDD - MUNRO, BLAKE RIVER AREA MEGATEM® II Survey: Residual magnetic field and EM anomalies	OGS / Discover Abitibi	OGS MAPS 81 780 – 81 781
KIDD - MUNRO, BLAKE RIVER AREA MEGATEM® II Survey: Shaded colour, second vertical derivative magnetic field with Keating correlation coefficient anomalies	OGS / Discover Abitibi	OGS MAPS 81 782 – 81 783
KIDD - MUNRO, BLAKE RIVER AREA MEGATEM® II Survey: Apparent conductance and EM anomalies	OGS / Discover Abitibi	OGS MAPS 81 784 – 81 785
KIDD - MUNRO, BLAKE RIVER AREA MEGATEM® II Survey: EM decay constant (tau) and EM anomalies	OGS / Discover Abitibi	OGS MAPS 81 786 – 81 787
KENOGAMI RIVER Aeromagnetic Survey: Residual magnetic field	Oneschuk, D., Coyle, M. and Dumont, R. (OGS & GSC co-release)	OGS MAPS 81 788 – 81 799
KENOGAMI RIVER Aeromagnetic Survey: First vertical derivative of the magnetic field and Keating anomalies	Oneschuk, D., Coyle, M. & Dumont, R. (OGS & GSC co-release)	OGS MAPS 81 800 – 81 811
Ontario Exploration & Geoscience Symposium 2002 – Abstracts and technical talks [CD]	Ontario Prospectors Association	Convention/Symposium, 2002
Abstracts: Ontario Exploration and Geoscience Symposium, Toronto, December 2003	Ontario Prospectors Association, Ontario Mineral Exploration Technology Program and OGS	Convention/Symposium
Ore Deposits at Depth 2003: Technical Sessions Abstract Volume	PPDA / CIMM	Convention/Symposium
Origin of spinifex texture in ultramafic sills at Serpentine Mountain and Pyke Hill, Abitibi Ontario	Prefontaine, S.	B.Sc. Thesis
ALBANY - ATIKAMEG - ATTAWAPISKAT RIVERS Airborne Magnetic Survey: Residual magnetic field	OGS Purchased Data	OGS MAPS 60 107 – 60 115
ALBANY - ATIKAMEG - ATTAWAPISKAT RIVERS Airborne Magnetic Survey: Second vertical derivative of the magnetic field and Keating anomalies	OGS Purchased Data	OGS MAPS 60 116 – 60 124
NAGAGAMI - SQUIRREL - WAKASHI RIVERS Airborne Magnetic Survey: Residual magnetic field	OGS Purchased Data	OGS MAPS 60 131 – 60 133
NAGAGAMI - SQUIRREL - WAKASHI RIVERS Airborne Magnetic Survey: Second vertical derivative of the magnetic field and Keating anomalies	OGS Purchased Data	OGS MAPS 60 134 – 60 136
ATTAWAPISKAT AREA Airborne Magnetic Survey: Residual magnetic field	OGS Purchased Data	OGS MAPS 60 206 – 60 243
ATTAWAPISKAT AREA Airborne Magnetic Survey: Second vertical derivative of the magnetic field and Keating anomalies	OGS Purchased Data	OGS MAPS 60 244 – 60 281

Title	Author	Type and Year of Publication[1]
Regional modern alluvium sampling survey of the Sault Ste. Marie – Espanola corridor, NE Ont.: Operation Treasure Hunt	Reid, J.L.	OGS Open File Report 6117
Geochemistry of groundwater from Jurassic kimberlites in the Kirkland Lake and Lake Timiskaming kimberlite fields, NE Ontario [CD]	Sader, J.A., Leybourne, M.I., McClenaghan, M.B. and Hamilton, S.M.	GSC Open File Report 4515
Geochemistry of groundwater from Jurassic kimberlites in the Kirkland Lake and Lake Timiskaming kimberlite fields, NE Ontario [CD]	Sader, J.A., Leybourne, M.I., McClenaghan, M.B. and Hamilton, S.M.	GSC Dataset OF 4515
Report of Activities 2002, Resident Geologist Program, Southern Ontario Regional Resident Geologist Report: Southeastern and Southwestern Districts, Mines and Minerals Information Centre, and Petroleum Resources Centre	Sangster, P.J., McGuinty, W.J., Papertzian, V.C., Steele, K.G., Lee, C.R., Barua, M., Laidlaw, D.A. and Carter, T.R.	OGS Open File Report 6115
Report of Activities 2002, Resident Geologist Program, Thunder Bay South Regional Resident Geologist Report: Thunder Bay South District	Schnieders, B.R., Scott, J.F., Smyk, M.C. and O'Brien, M.S.	OGS Open File Report 6112
Geochemistry and metallogenesis of komatiitic rocks in the Abitibi greenstone belt	Sproule, R.A., Lesher, C.M., Ayer, J.A. and Thurston, P.C.	OGS Open File Report 6073
L'exploration pour le diamant techniques et aspects pratigues: Notes du cours intensif [Techniques and practical aspects of diamond exploration]; 3 volumes	Tremblay, M. and Girard, R.	Seminar
Lithogeochemical data for the Timmins West area: Carscallen, Denton, Bristol, Ogden and Deloro Twps. [diskette]	Vaillancourt, C. and Hall, L.A.F.	OGS Dataset MRD 123
Investigation of mafic-ultramafic intrusions in Ontario and implications for platinum group element mineralization	Vaillancourt, C., Sproule, R.A., MacDonald, C.A. and Lesher, C.M.	OGS Open File Report 6102 *

NOTES & ABBREVIATIONS:
**Funded by Operation Treasure Hunt*
[1]*All publications were issued during 2003 unless otherwise noted.*
AMEM: Airborne magnetic and electromagnetic survey
CIM: Canadian Institute of Mining, Metallurgy & Petroleum
GAC: Geological Association of Canada
GSC: Geological Survey of Canada
PPDA: Porcupine Prospectors and Developers Association

Ontario

Ontario Geological Survey
Regional Resident Geologist Program

Timmins Regional Resident Geologist (Sault Ste. Marie District)–2003

by

M. Hailstone and S. Butorac

2004

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Timmins Regional Resident Geologist (Sault Ste. Marie District)–2003

M. Hailstone[1] and S. Butorac[2]

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INTRODUCTION

Mineral production from the Sault Ste. Marie District during 2003 consisted of bedrock aggregate from 6 established quarries. A total of 27 individuals and companies are known to have performed mineral exploration and prospecting in the district during the year. Diamonds, gold and copper - IOCG (iron oxide-copper-gold) were the major exploration targets in 2003. Other exploration targets included traprock, platinum group metals and magmatic copper-nickel sulphides along with VMS style base metals. Details on exploration activity can be found in the following text and by reference to Table 1 and Figures 1 and 2.

QUARRYING ACTIVITY

Production continued from 6 bedrock quarries established in the Sault Ste. Marie District. The quarry locations are shown in Figure 2.

Ontario Trap Rock (A Division of R.W. Tomlinson Limited)

Ontario Trap Rock (map reference A, Figure 2) continued quarrying crushed bedrock aggregate from Nipissing diabase at their operation located 3 km east of the town of Bruce Mines in Plummer Additional Township. R.W. Tomlinson Limited produces approximately 800 000 tonnes of high-quality aggregate from this facility yearly for the construction industry.

The operating season begins in March and normally ends in November, with 25 people employed on a seasonal basis. About 90% of the aggregate product is transported by ship from Ontario Trap Rock's deep-water port on Lake Huron, with the remaining product transported by rail and truck. During the early part of the 2003 shipping season, lake water levels were reported to be higher than in recent years allowing increased shipment size with resulting lower costs. During the latter part of the season, water levels once again fell to lower than normal, resulting in smaller shipments. Production and sales during the year are governed by market demand, with a production goal pegged at 1 million tonnes in 2004. The quarry has an estimated $2 million impact on the area economy (Jim Forbes, Ontario Trap Rock, personal communication, 2004).

Table 1. Exploration activity in the Sault Ste. Marie District in 2003 (keyed to Figure 1).

Abbreviations

Au ..... Gold	KIM ..... Kimberlite indicator mineral sampling
BM ..... Base metals	OPAP ..... Ontario Prospectors Assistance Program
Cu ..... Copper	Pb ..... Lead
Dia ..... Diamond	PGE ..... Platinum group element(s)
IOCG ..... Iron oxide-copper-gold	REE ..... Rare earth element(s)

No.	Company/Individual (Occurrence Name) or Property	Township/Area (Commodity)	Exploration Activity (Incentive Program)
1	Amerigo Resources Ltd.	Aweres and Deroche (IOCG) and Coppercorp prospect Montreal Mining Location (IOCG)	Geological mapping and sampling, lithogeochemistry, airborne geophysical survey, diamond drilling
2	Canabrava Diamond Inc./Kennecott Canada Exploration Ltd. JV	Curtis, Cuthbertson, Hurlburt, Jessiman, Jollineau, Maeck, Martel, Snow (Dia)	Inactive during the summer 2003
3	Benninghaus, W.	Palmer (IOCG)	Prospecting, sampling
4	Brunett, R. and Morin, R.	Otter (diabase)	Propsecting, sampling
5	De Carle, R.	Proctor (PGE)	Prospecting, sampling
6	Eastmain Resources, Inc.	Plummer Additional (IOCG)	Prospecting, mapping
7	Hicks, C.R and Lucuik, G.	VanKoughnet (low alpha Pb)	Prospecting, sampling, assays
8	Intrepid Minerals Corporation	Ryan (IOCG)	Prospecting, sampling, geological mapping, gravity, lithogeochemistry and diamond drilling
9	Leahy, P.F.	Palmer (IOCG, Cu-Au)	Prospecting, sampling
10	Lucuik, G. and Fenwick, K.	Norberg (East Breccia) Tribag Mine	Prospecting, sampling
11	MacLachlan, B. and Londry, J.	Gaudette, Gaudette Property (Ni, Cu, Pt, Pd)	Soil geochemistry, prospecting
12	McDonald, A.W.	Olsen (Au)	Prospecting, sampling
13	Morra, P. and Venn, V.	Scriven (Au)	Prospecting, sampling
14	Morrison, D.M.	Lewis (Traprock)	Prospecting, sampling
15	Nicholson, T.S.	Ryan and Kincaid (IOCG, Cu-Au)	Prospecting, sampling
16	O'Connor, T.	Kincaid and Ryan - Daisy Stone Project ornamental stone property	Stripping and washing outcrop
17	Pecors Gold Property	Gaiashk (Au)	Prospecting, sampling, ground magnetometer and IP surveys
18	Pelky, R.J.	Lewis (PGE)	Prospecting, sampling
19	Pipoli, D.N.	Gapp, Menard, Norberg, Pine, Reilly, Renwick, Ryan, Wells, Wishart, Wlasy (IOCG, Cu-Au, Dia, BM)	Prospecting, sampling, assays
20	Ralph, J.G.	Maeck (REE, Dia)	Prospecting, sampling
21	Shelly, D.L.	Kincaid (IOCG, Cu-Au)	Prospecting
22	SouthernEra Resources Limited	Lane, McNie, Menard, Reilly, Renwick, Rollins and Root (Dia)	Airborne geophysics, KIM sampling, ground geophysics
23	Stares, M.R.	Slater (IOCG)	Prospecting
24	Steed, C.M.	Spragge (PGE)	Prospecting
25	Troon Ventures Ltd. Option from Tremblay, M. and Robert, J.	Moen and Schembri Troy Property	Geological mapping and sampling, soil and lithogeochemistry
26	Tortosa, D.	Kincaid Baseline Property (Cu, Au)	Geological mapping, litho and soil geochemistry survey and stripping
27	Vance, J. and Ward, M.	Shedden (PGE)	Prospecting

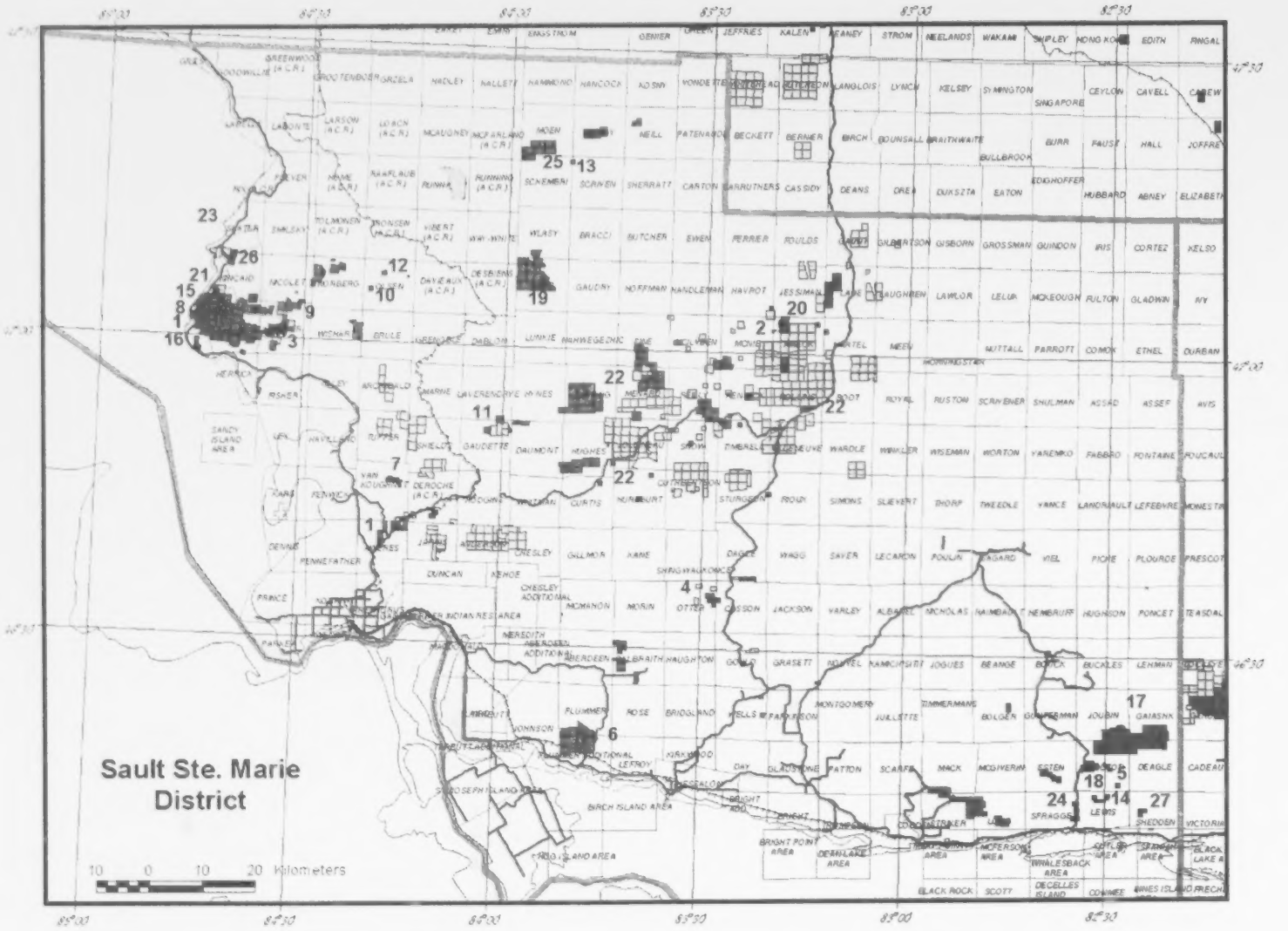

Figure 1. Exploration activity (keyed to Table 1) and staking in the Sault Ste. Marie District between February 4, 2003 (light-coloured claims cancelled during the year) and February 5, 2004 (dark-coloured claims active as of Feb. 5, 2004). A colour version of this figure can be found at http://www.mndm.gov.on.ca/mndm/mines/ims/roa/default_e.asp).

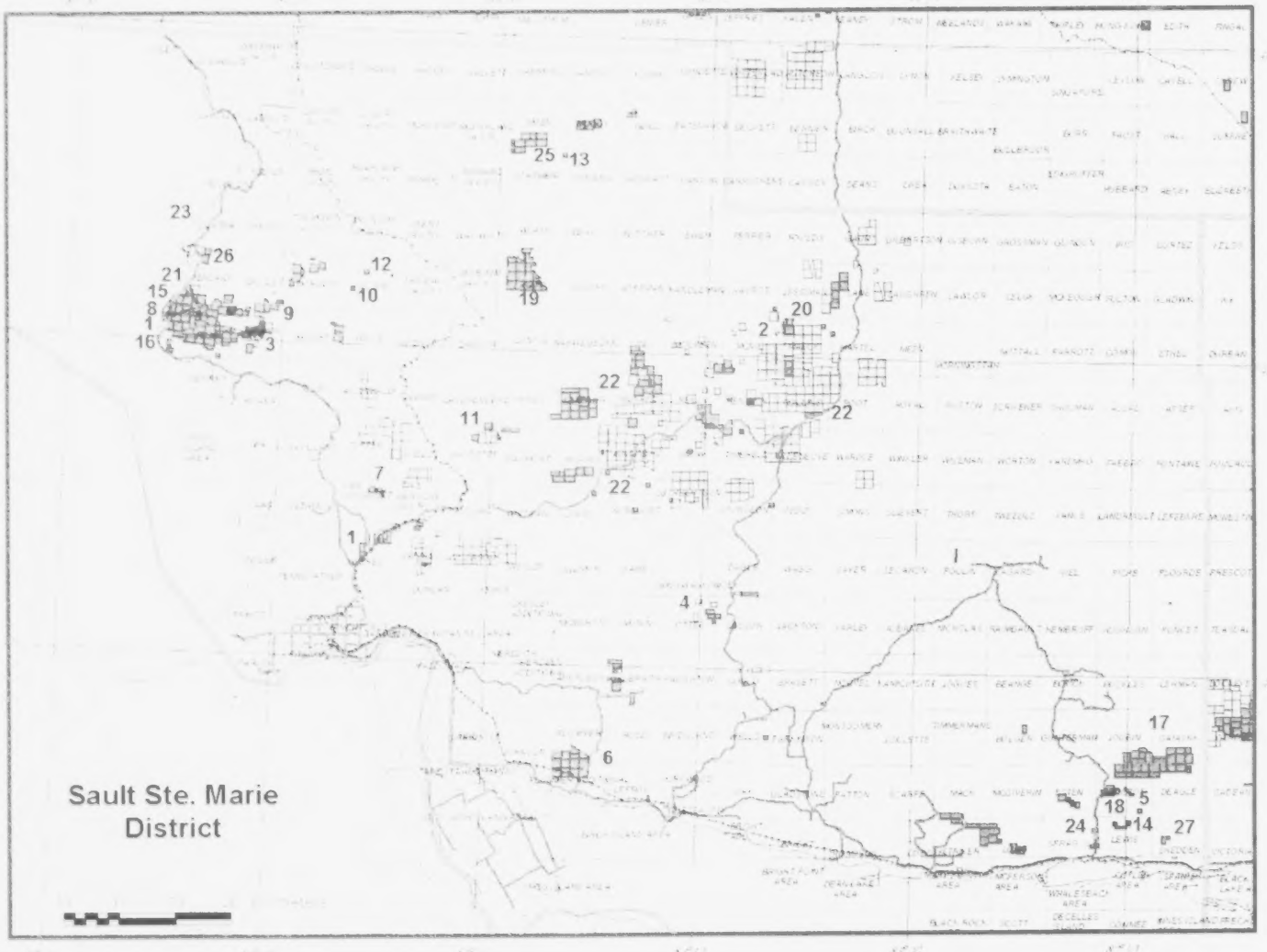

Figure 1. Exploration activity (keyed to Table 1) and staking in the Sault Ste. Marie District between February 4, 2003 (light-coloured claims cancelled during the year) and February 5, 2004 (dark-coloured claims active as of Feb. 5, 2004). A colour version of this figure can be found at http://www.mndm.gov.on.ca/mndm/mines/ims/toa/default_e.asp).

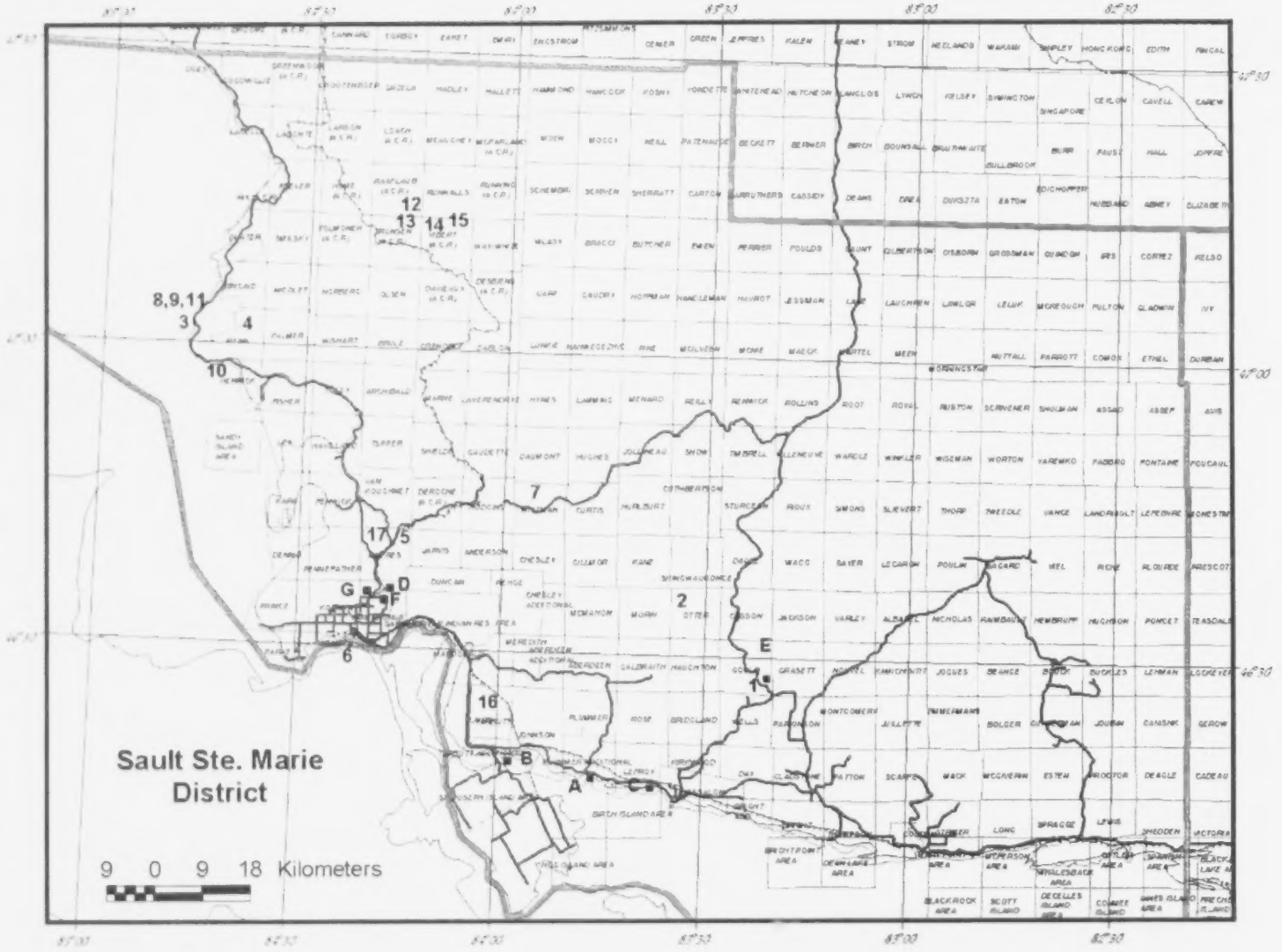

Figure 2. Property visits and quarry locations (keyed to text and Table 4).

Gilbertson Enterprises Quarry

Gilbertson Enterprises (map reference B, Figure 2) of St. Joseph Island operates a quarry, which is east of Highway 548 and south of Highway 17 in Tarbutt Additional Township. The quarried rock is a reddish pink to grey granophyre, a late differentiate typical of Nipissing diabase found in the Bruce Mines area. Several sizes of aggregate and landscaping products are obtained from crushing and screening operations. Production decreased in 2003 to approximately 15 000 tonnes in response to reduced local demand. Deliveries in 2003 were drawn principally from stockpiles and some additional quarrying. In addition to quarrying, Gilbertson supplies equipment and custom crushing services to quarriers throughout northern Ontario (S. Eddy, Gilbertson Enterprises, personal communication, 2004).

Nestorville Quarry

The Nestorville Quarry (map reference C, Figure 2) is located 4 km west of Thessalon, near the town of Nestorville in Lefroy Township. The quarry is operated by Smelter Bay Aggregates. Crushed Nipissing diabase is produced for a number of uses, chiefly rail ballast and quality construction aggregate used in fabricating high-strength concrete. Crushing is accomplished using contracted portable machinery. Production was reduced in 2003 due to poor demand and low product prices.

Root River Sandstone Quarry

Root River Sandstone Quarry (map reference D, Figure 2), operated by E. Koseba, is located in Tarentorus Township within the city limits of Sault Ste. Marie. The quarry produces an attractive red flagstone from Jacobsville sandstone, which is used mostly for stone facing, flag walkways, retaining walls and landscaping. A new market was established in 2002 for sandstone boulders, with shipments to southern Ontario totalling 110 tonnes. Production of flagstone increased slightly again this year with a total of 91 tonnes extracted during the year (E. Kosiba, Root River Sandstone Quarry, personal communication, 2004).

Rancourt Quarry

The Rancourt Quarry (map reference E, Figure 2) is located approximately 41 km north of the town of Thessalon in Gould Township. Quarrying operations commenced in 1999, producing black argillite for use in the construction of fireplaces, walkways, outdoor stairs and patios. Quarrying was suspended during 2002 due primarily to poor market prices (R. Bertolo, Rancourt Quarry, personal communication, 2004).

Brandes Aggregate

Brandes Aggregate (map reference F, Figure 2) is located within the city of Sault Ste. Marie. It has been operational for approximately 30 years. The quarry produces an estimated 10 000 tonnes of bedrock aggregate sourced from granitic gneiss used primarily for road construction and landscaping (Paul Caravaggio, Brandes Aggregate, personal communication, 2004).

LaFarge Material and Construction

LaFarge quarry commenced operation in 1999 within the city of Sault Ste. Marie (map reference G, Figure 2). The quarry produces 10 000 tonnes of bedrock aggregate sourced from granite gneiss used primarily for aggregate and landscaping purposes (Joe Nelles, LaFarge Material and Construction, personal communication, 2004).

EXPLORATION ACTIVITY

During 2003, approximately 4333 claim units were cancelled in the District. Notably, 1561 claim units were allowed to come open by Canabrava Diamond Corp./Kennecott Explorations Canada JV in the Ranger Lake-Seabrooke Lake-Rocky Island Lake areas. The claims had been staked in April 2001 for diamond exploration. No assessment work was filed on these claims.

A total of 821 mining claim units were staked in the Sault Ste. Marie District. A summary of exploration activity is reported in Table 1. Locations are shown on Figure 1.

Six companies contributed approximately $1.5 million to exploration expenditures in the Sault Ste. Marie District during 2003. SouthernEra Resources Ltd. are looking for diamonds in the area. Amerigo Resources Ltd. (now Nikos Exploration Ltd.) and Intrepid Minerals Corporation explored for IOCG (iron oxide-copper-gold) deposits. Both Amerigo and Intrepid Minerals commenced the year with diamond drilling programs in Aweres and Ryan townships, respectively.

SouthernEra Resources Limited

During 2001, SouthernEra Resources Limited staked 986 claim units in 13 townships in the vicinity of Menard, Reilly, Rollins, Renwick and Maeck townships. In 2002, an additional 64 claims were staked in Lane Township.

Following completion of a 6000 line-kilometres airborne geophysical survey and the release of a 105 000 line-kilometres government-funded (Fed-Nor) airborne geophysical survey in northern Ontario during 2001, SouthernEra secured the 100 percent-owned Majestic and Crown diamond projects. Ground magnetic, electromagnetic and gravity geophysical surveys were completed in 2002 to test a number of kimberlite targets initially identified in airborne surveys (Atkinson et al. 2003).

SouthernEra referred to their Ontario Superior Program in their Global Business Development and Exploration Review 2003 published on December 17, 2003:

> "The Superior Craton exploration program is composed of three 100 percent-owned diamond projects in Ontario: Majestic, Crown and Discovery. The Superior Craton program has advanced a number of airborne targets to the drill stage and this year a total of 89 ground geophysical surveys were completed and 21 targets drilled. A positive microdiamond result was returned from an 8-kilogram core sample recovered from a drill hole that tested a high priority magnetic-low airborne target. In addition, following positive kimberlitic indicator mineral results recovered from stream and till samples in Ontario, two airborne surveys for a total of 11,000 line kilometres were completed during November and December 2003."

By September 30, 2003, SouthernEra Resources Ltd. had spent $2.175 million to date on their exploration activities at their 100% interest Superior Diamond Program (SouthernEra Resources Ltd., 3rd Quarter financial report 2003).

Amerigo Resources Ltd /Nikos Explorations Ltd./Faconbridge Limited and Batchawana Group - Iron Oxide-Copper-Gold Mineralization at the Island Copper and Coppercorp Properties

In February 2003 Amerigo Resources Ltd. contracted Fugro Airborne Surveys to carry out a high-resolution aeromagnetic survey over two blocks centred on the Coppercorp (north block - 825 line kilometers) and the Island Copper prospect (south block - 2708 line kilometres). Line spacing was 100 meters on each of the surveys. The airborne magnetic survey revealed several aeromagnetic anomalies on the Coppercorp property including a large (three by three kilometre) magnetic high that straddles the northern property boundary, as well as two north-northeast-trending magnetic highs in the vicinity of the old Coppercorp mine workings.

During the summer of 2003, a grid was established at the Coppercorp property and geological mapping and a lithogeochemical survey were carried out during the fall.

Amerigo changed focus during the year to primarily a tailings refinery company, processing tailings at the El-Tienente Copper producer in Chile, South America.

Another company, Nikos Explorations Ltd., intends to acquire Amerigo's interest in the Coppercorp, Bellevue and Island Copper properties as noted by a SEDAR filed Material Change and press release. The acquisition is subject to the approval of the TSX Venture Exchange.

Nikos announced that the Batchawana Group (a group of local prospectors formed by Mr. T. Nicholson) and Falconbridge Limited had agreed to the assignment of the Coppercorp and Island Copper properties, respectively, from Amerigo Resources Ltd. to Nikos. Amerigo currently holds options to earn a 100% interest in the Coppercorp property and a 55% interest in the Island Copper Property.

Nikos will assume the remaining work commitments on the Coppercorp property which amount to $100 000 each year over the next three years. The Batchawana Group will receive $72 000 cash and 700 000 shares of Nikos over the next three years (T. Nicholson, prospector, personal communication, 2004).

Upon receipt of TSX Venture Exchange approval of the transaction, Falconbridge Limited will receive a total of 300 000 shares of Nikos Explorations Ltd. In addition, Nikos will spend no less than $100 000 in exploration on the Island Copper property prior to January 21, 2005 or, if the full expenditure is not made, make a cash payment to Falconbridge for the remaining portion.

The exploration targets on the Coppercorp and Island Copper properties are bulk tonnage iron oxide copper-gold deposits. Island Copper, the more advanced of the two properties, is located approximately 20 km northeast of the port city of Sault Ste Marie. Infrastructure is excellent with 2 paved highways crossing the property and the Algoma Central Railway running along the southern boundary.

At the Island Copper prospect, diamond drilling during the 1960s and early 1970s intersected copper- and gold-bearing rock grading up to 4.02% copper over 9.5 metres that included 6.22% copper and 1.7 g/tonne gold over 3.05 metres. Recent exploration by Falconbridge outlined coincident, east-trending gravity and chargeability anomalies. Follow up work by Amerigo identified a partly coincident east-trending aeromagnetic anomaly. These anomalies are significant, since many iron-oxide-copper-gold deposits elsewhere in the world have been discovered by drilling such anomalies (www.amerigoresources.com).

A four-hole diamond drilling program by Amerigo intersected sulfide mineralization in all four holes. The best copper values were found in a near surface intersection of 8 meters that graded 1.5% copper and 0.2 grams/tonne gold and included 4.44% copper and 0.5 grams/tonne gold over 2 meters (press release, Amerigo Resources Ltd., 2003).

The Coppercorp property covers an area of 32 square kilometres and includes the site of the past producing Coppercorp mine. Over 1 million tonnes of ore at an average grade of 1.16% Cu, along with gold and silver credits was produced between 1965 and 1972. Following mine closure in 1972, very little exploration was carried out until Amerigo optioned the property in late 2002. The large number of copper occurrences on the property illustrates the property's potential. A regional sampling program undertaken by Amerigo resulted in 19 samples grading more than 1% copper and seven samples grading more than 1 g/tonne gold, including values up to 10.71% copper over 0.6 metres and 3.34% copper and 3.3 g/tonne gold over 0.45 metres (Nikos Explorations Ltd., press release, 2004).

Interestingly, R. Moss reports that all 107 samples collected from the Coppercorp property show La/Yb values >1, indicating that all are enriched in light rare earth elements (LREE) over heavy rare earth elements (HREE). Of particular interest are the anomalous samples collected at Silver Creek South and Pancake River Road showings (R. Moss, Amerigo Resources Ltd., personal communication, 2003).

Nikos Explorations Ltd. has integrated the recent drilling data with historical work to plan a 2004 exploration program for both the Coppercorp and the Island Copper property (R. Moss, Amerigo Resources Ltd., personal communication, 2004).

Intrepid Minerals Corporation and Falconbridge Limited IOCG Target – Ryan Township

The Ryan Township property, located 60 km north of Sault Ste. Marie, is accessible from Highway 17 along local logging roads, skidder and quad track ATV trails.

In December 2002 Intrepid Minerals Corporation announced plans to commence diamond drilling on several iron oxide-copper-gold (IOCG)-style targets identified on the 35 km^2 Ryan Township property. This project was being explored as part of the Circum-Superior strategic alliance with Falconbridge Limited, who have the right to earn a 50% interest in the project. During 2002, Intrepid outlined a number of geophysical anomalies with associated mineralization characteristic of IOCG systems, referred to as Olympic Dam style deposits. A total of 8 priority targets had been identified which will require drill testing over the next 12 months (Intrepid Minerals Corporation, 2nd quarter financial statements, August 29, 2002).

Excerpt from work filed for assessment purposes; Intrepid described work completed on the Ryan Township property with the following highlights:

- The most significant result from the 2002 mapping and prospecting program was the discovery of widespread secondary magnetite +/- copper mineralization predominantly within lower parts of the Keweenawan volcano-sedimentary assemblage. Secondary magnetite was found to occur as massive veins (up to 1 meter in width), replacing the matrix within conglomerates and vesicular basalts, as blebs and as fracture fillings. In addition, several small 100-200 square meter, magnetite +/- copper bearing, breccia-diatremes were found near the margins of the lower felsic unit. Another important feature observed from the mapping program was the recognition of widespread alteration/replacement within the lower mafic volcanics by epidote-actinolite-hematite/magnetite.

- The Proterozoic lithologies that underlie portions of the Ryan Township properties were found to be anomalously high in REE's. Values are at least comparable to those found within host lithologies to the Carajas IOCG Deposits in Brazil.

- A short diamond drilling program consisting of five holes totalling 797 meters was carried out December 2002 to January 2003. Of significance is the intersection of presumed Archean oxide-facies iron formation in B02-02. Other drill results are considered disappointing for IOCG mineralization.

Further details on the exploration methodology and results obtained can be found by consulting a comprehensive report filed by Intrepid (assessment file # Ryan SSM MP 11 and 12). It is worth noting that one of the strongest gravity and coincident magnetic anomalies, the Powerline A-1 anomaly, was not drill tested due to some discussion and uncertainty as to the depth of the anomaly.

Following a short field program consisting of mapping and sampling in May and June 2003, Intrepid completed their IOCG program on the Ryan properties and the 118 claim units contained within the Nicholson option were returned in August 2003 (personal communication, T. Nicholson, prospector).

Troon Ventures Ltd - Troy Gold Occurrence - Tremblay, M. and Robert, J. Option – A New Gold Occurrence in the Batchawana Greenstone Belt

In May 2002 Troon Ventures Ltd. acquired the Troy Property in Moen Township through option agreement with prospectors J. Robert and M. Tremblay (qualifying report on Troy Property available on SEDAR at http://www.sedar.com/issuers/issuers_en.htm). The property is located approximately 90 km southwest of Chapleau, and was made road accessible in 2000-01 through the establishment of new logging roads into Toll Creek area.

The 101-claim unit property is located within the Eastern Domain of the Batchawana greenstone belt. Archean tholeiitic mafic and felsic metavolcanics and metasediments that have been intruded by diorite dykes and quartz-feldspar porphyry underlie the property. Several northeast-trending shear zones occur on the property.

> "Until recently the property was road inaccessible. As a result little exploration was completed in the immediate area. In the fall of 2001, limited roadside prospecting over newly constructed roads located gold-bearing mineralization at two showings, the Troy and Road occurrences. Mineralization consisting of disseminated and stringer pyrite and chalcopyrite occurs in quartz-carbonate veins and in the wallrock. Typically the host rocks are variably silica, sericite, carbonate, chlorite and possibly albite altered." (excerpt from Troon Ventures website at http://www.northair.com/troon/)

The area had been mapped at 1 inch to ½ mile (1:31 680) scale and is described in Geological Report GR 229 (Wilson 1983). In this report Wislon recommends the area around the Troy Lake stock as favorable for hydrothermal-type deposits. A property visit by Brian Atkinson is described in the Report of Activities, 1999 (Atkinson et al. 2000).

The following property description is an excerpt from the Troon Ventures website at http://www.northair.com/troon/)

> The Road showing is located 2 km northeast of the Troy Occurrence [see Figure 3]. Five grab samples collected from the showing returned values ranging up to 6.8 g/t Au with two of the samples assaying greater that 5.6 g/t Au. The showing coincides with a series or airborne EM anomalies that have been traced for more than 5 km. Due to the limited amount of work done to date, the ultimate dimensions of the mineralized occurrences has yet to be determined.
>
> At the Troy and Road showings, anomalous gold values occur in both quartz-carbonate veins and pyritic volcaniclastic rocks. At the East zone, gold occurs in heavily mineralized quartz veins. Grab samples taken during previous work programs from the various zones assayed up to 19.0 g/t Au (Troy), 6.8 g/t Au (Road) and 0.5 g/t Au (East zone). Follow-up work in 2003 consisted of prospecting, mapping and geochemical sampling. At the Troy showing, anomalous, (>100 ppb), Au values occur in chip and grab samples intermittently over a 400 metre strike length. Due to overburden, ultimate strike length and width of the zone could not be determined. Within the zone, grab and chip samples respectively assay up to 19 g/t Au and 5.807 g/t Au over 0.3 metres. Soil sampling completed over a 180 x 250 metre grid outlined a 280 x up to 60 metre wide linear anomaly that in part overlies the mineralized trend. Within the anomaly, soil sample values of 5511, 3342 and 549 ppb Au occur.
>
> At the Road showing, limited continuous chip and grab sampling outlined a 400 metre long trend of anomalous gold values. Results include 2.10 g/t Au over 1.8 metres, 3.445 g/t Au over 1 metre and 1.582 g/t Au over 0.30 metres. A small soil sample grid outlined a weak, up to 60 x 200 metre long and open gold in soil anomaly that appears peripheral to the trend of mineralization.
>
> At the East zone, preliminary sampling and prospecting have been completed. A 1.8 metre sample across the vein averaged 1.071 g/t Au. Approximately 20 metres along trend to the west a small outcrop occurs hosting anomalous gold values including a 0.25 metre sample assaying 0.5 g/t Au. The along-trend projection of the zone is overburden covered.

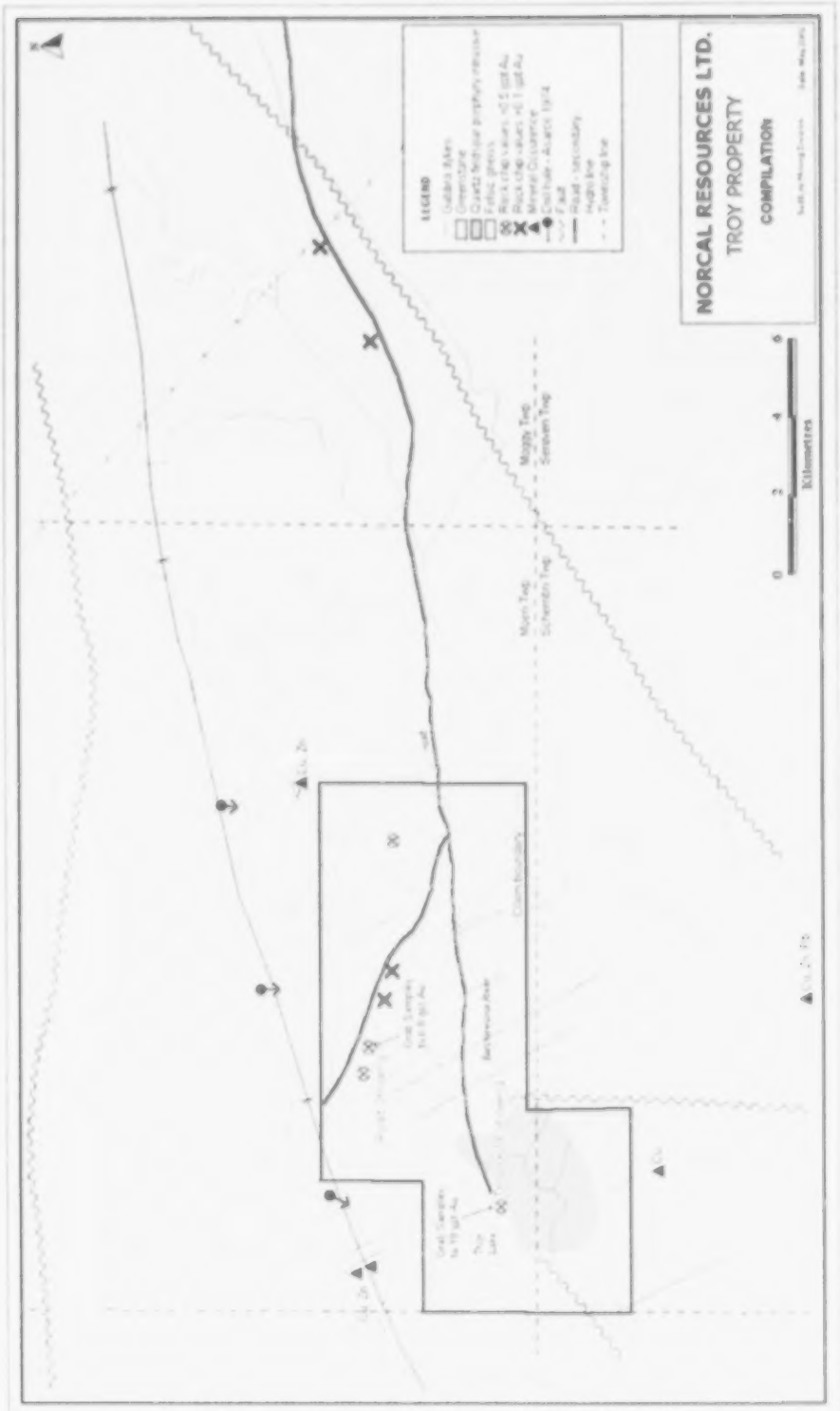

Figure 3. Troon Ventures Ltd. Troy Gold property.

LAND USE PLANNING ACTIVITY

Staff of the Sault Ste. Marie District Geologist Office provided ongoing input to the Ontario Living Legacy review process for sites regulated in 2003 in the Sault Ste. Marie District.

Staff provided comments on the Earth Science component of the Puddingstone Memorial Park site with respect to geology and mineral potential to the Ministry of Natural Resources. Staff attended Algoma Headwater Signature Site public information and Management Options Open Houses in January and August. These open house meetings were held in Searchmont, Sault Ste. Marie, Chapleau and Thessalon.

The District Geologist provided comments on 4 withdrawals of Mining Lands.

Staff attended a public meeting in Bruce Mines regarding issues related to Ontario Traprock production in Bruce Mines. V. Cote, President of the Ontario Prospectors Association, also attended. Staff responded to 2 requests for information pertaining to Official Plan and Official Plan Amendments and other municipal planning inquiries in 2003.

SAULT STE. MARIE DISTRICT STAFF ACTIVITIES

The office received 605 visitors and responded to 1697 telephone calls during the year. The Drill Core storage facility was visited by 18 clients. Assessment files and publications received in the Sault Ste. Marie office in 2003 are listed in Tables 2 and 3.

In March, D. Farrow moved on to duties as District Support Geologist in Sudbury. S. Butorac assumed the job as contract District Support Geologist in the Sault Ste. Marie office. E. Whitley and J. Nelli worked as Experience students for the summer months of June through August, providing technical and administrative assistance to the office. Notably, a spreadsheet was compiled indexing all separates (reprints from scientific journals) and theses pertaining to the District.

The office provided a Co-operative Education student placement opportunity to one student from Bawating Collegiate and Vocational School: C. Reid worked from September until January assisting with various office functions, including assessment work compilation and filing, participating in Arcview GIS projects, data assessment and compilation.

The District Support Geologist attended training sessions in First Aid and CPR, WHMIS, forklift operator safety training, work-life balance 101/102, Garmin GPS practical training and the Safe Boaters Course.

Staff of the Sault Ste. Marie District Geologist Office completed 17 field visits during the year (Table 4). An advertised field trip was offered in conjunction with the Sault and District Prospectors Association in June, focusing on Keweenawan rocks and associated mineralization of the Mamainse Point formation.

In April, M. Hailstone attended the Northeastern Ontario Regional Mines and Minerals Symposium in Haileybury. During the first week of May, M. Hailstone participated in explaining outcrops in the Elliott Lake area that record the earth's early atmosphere with and without oxygen to a Japanese film crew. The crew was particularly interested in geological evidence of a "Snowball earth". The Japan Broadcasting Company is in the process of making a movie called "The Miracle Planet 2", to be aired in 2005. Also in May, M. Hailstone participated in a Ministry of Municipal affairs and Housing Land Use seminar in Sudbury.

In July, M. Hailstone participated in a course of study resulting in successful completion of the APGO ethics exam in Sudbury.

Table 2. Assessment files received in the Sault Ste. Marie District in 2003.

Abbreviations

AEM ..... Airborne electromagnetic survey
AM ..... Airborne magnetic survey
ARA ..... Airborne radiometric survey
Beep ..... Beep Mat survey
Bulk ..... Bulk sampling
DD ..... Diamond drilling
DDH ..... Diamond drill hole(s)
DGP ..... Down-hole geophysics
GC ..... Geochemical survey
GEM ..... Ground electromagnetic survey
GL ..... Geological survey
GM ..... Ground magnetic survey
GRA ..... Ground radiometric survey
Grav ..... Gravity survey
HLEM ..... Horizontal loop electromagnetic survey
HM ..... Heavy mineral sampling
IM ..... Industrial mineral testing and marketing
IP ..... Induced polarization survey
Lc ..... Linecutting
Met ..... Metallurgical testing
OD ..... Overburden drilling
ODH ..... Overburden drill hole(s)
OMIP ..... Ontario Mineral Incentive Program
OPAP ..... Ontario Prospectors Assistance Program
PEM ..... Pulse electromagnetic survey
PGM ..... Platinum group metals
Pr ..... Prospecting
RES ..... Resistivity survey
Samp ..... Sampling (other than bulk)
Seismic ..... Seismic survey
SP ..... Self-potential survey
Str ..... Stripping
Tr ..... Trenching
UG ..... Underground exploration/development
VLEM ..... Vertical loop electromagnetic survey
VLFEM ..... Very low frequency electromagnetic survey

Township or Area	Company Name	Year	Type of Work	AFRO Number	Resident Geologist Office File Designation
Simons	Lajoie-Blue Lake Property	1929	Str, Tr	Donated	SSMP Simons –01
Wells	Macgregor R.A (Skead hldgs)	May-00	GL Samp	2.23529	SSMP Wells-002
McDonnel Mineral Location	Amerigo Resources Ltd. Coppercorp Property	Fall 2002	GL, Samp	2.25047	SSMP Mcdonell Mineral Loc-09
Gaiashk	Pecor Gold Property, JML Resources Ltd. by Dan Patrie	Feb 20-03	Lc, GM	2.25034	SSMP Gaiashk-10
Grootenboer	A.C.R., Agawa Lineament, (Canyon-Eaton) Geology report by J.R. Renault.	1962	GL, AM, KIM	Donated	SSMP Grootenboer-02
Maek	Canabrava Diamond Corporation Technical Reports - JV project has 3,362 claim units	April 15, 2002	GL, AM, KIM	Internet	General-Maek
Maek	Canabrava Diamond Corporation Technical Reports - Groundhog project has 131 claim units	April 15, 2003	GL, AM, KIM	Internet	General-Maek
Maek	Canabrava Diamond Corporation Technical Reports-Cat Project, Atiwapiskat, Ontario has 106 claim units. (Canabrava and Navigator Exploration Corp). (James Bay Lowlands).	April 15, 2002	GL, AM, KIM	Internet	General-Maek
Maek	Canabrava Diamond Corporation Technical Reports- 119 claim units, centre of block is 18' 35" south lat/ 46' 31" west longitude	April 12, 2002	GL, AM, KIM	Internet	General-Maek
Maek	Canabrava Diamond Corporation Technical Reports	May, August and November, 2002	GL, AM, KIM	Internet	General-Maek
Running	Company-author unknown	1909	GL, Samp	Donated	SSMP Running-02

Township or Area	Company Name	Year	Type of Work	AFRO Number	Resident Geologist Office File Designation
Ryan	Intrepid Minerals Corporation	December 27, 02	DDH, Samp,GL	2.25407	SSMP Ryan-011
Gaiashk	JML Resources Ltd. Pecor Gold Property. By Dan Patrie	April 23, 03	I.P.	2.25488	SSMP Gaiashk-11
Deroche	Campbell Iron Claims	June 08, 09	Tr, Str	Donated	SSMP Deroche-09
Deroche	Report on Hematite Prospect by L. L. Bolton		Pr, Gl, Samp	Donated	SSMP Deroche-10
Ryan	Heck Lands Near Batchewana Bay Ontario	1942	Pr, Samp	Donated	General-Ryan
Deroche	Campbell Iron Claims	June 9, 23 and 24 1914	Str, Tr, Samp	Donated	General-Deroche
Long	Report on Iron Property near Algoma Mills	August 03, 1907	Tr, Samp	Donated	SSMP Long-06
Marne	Dennison Iron Prospects	Date unknown	Tr, Samp	Donated	SSMP Marne-03
Nicholas	Report on Cashin Iron Property	November 08, 11	Tr, Samp	Donated	SSMP Nicholas-02
Johnson	Campment D'ours Island	August 06 to 09, 1909	Samp	Donated	SSMP Johnson-05
Montreal Mining Location	Brunette, R. and Morin, R.	June 2, 9, Aug. 10, 29, 30-01, May 14, 15, Aug. 11 and 12/02	Str, Samp	2.25618	General-Montreal Mining Location
Ryan	Intrepid Minerals Corporation	Dec.-02 to Jan.-03	GL, Pr, Samp, Grav, DD	2.25463	SSMP Ryan-12
Gaunt	done by R.A. MacGregor, P. Eng.	Oct-02	GL, Samp	2.256	SSMP Gaunt 02
Long	Peach Uranium Claims	April 3 1953	DD	Donated	SSMP Long 07
Vankoughnet	George Lucuik's Work in Vankoughnet Twp.	Sept 14 2002	GL, Samp	2.25854	SSMP Vankoughnet 15
Gapp	Goodwin	Oct-58	GL, Samp	Donated	SSMP Gapp 17
Labelle	Report on the Geological and Scintillometer Surveys, Donaldson-McCombe Claim Group	May 18-June 28, 1951	Lc, GL, Samp	Donated	SSMP Labelle 02
Greenwood	Report (1 p) Prospecting	Oct-60	Pr	Donated	SSMP Greenwood 01
Labonte	Report to the "Ottawa Associates" on Mining Property Owned by L.R. Withey	Unknown	Lc, Gl, Str, Tr, Pr, Samp	Donated	SSMP Labonte 01
Labelle	Report to Highland Prospecting Syndicate on Franz Mining Property	Unknown	GL, Samp	Donated	SSMP Labelle 03
Labonte	Frater-Jalorne Radioactivity Discovery	Nov-48	Pr, Samp	Donated	SSMP Labonte 02
Deroche	Wierenga Claims	1969	DD, Samp	Donated	SSMP Deroche 11
Ryan and Kincaid	Daisystone Project-Kincaid and Ryan Townships by Thomas O'Connor	May 1999-August 2003	Str, Tr, Samp	2.26144	SSMP Ryan-13

Township or Area	Company Name	Year	Type of Work	AFRO Number	Resident Geologist Office File Designation
Deroche	Geology/Aeromagnetic Survey, Amerigo Resources Ltd., for George Lucuik	Feb/May 2003	AM	2.25768	SSMP Deroche-12
Deroche	Lithogeochemistry Results by Roger Moss and John Camier for Amerigo Resources Ltd.	May-Sept. 2003	GL, Samp, GC	2.26254	SSMP Deroche-13
Desbien	Geology + Exploration Potential Report for Transgold Resoures INC	Aug-87	Str, Tr, Samp, GM	Donated	SSMP-Desbien-0019
Desbien	Jacques R. Renault	Sept. 10, 1962	GL, Samp	Donated	SSMP-Desbien-0020
Norberg	O.D. Maurice for Alcourt Mines Limited	Mar-56	GL	Donated	SSMP-Norberg-14
Kincaid	Delio Tortosa M.Sc.	Sept. 2003	GL, Pr, Samp, Str, Tr	2.26465	SSMP-Kindcaid-18
Gaudette	Bruce A. Maclachlan and John W. Londry	May 27-29 2003	GC, Samp	2.26568	SSMP Gaudette-03
Korah	A.C.R. Industrial Minerals	1960	GL	Donated	SSMP-Korah-03
Multiple twps	Author Byron W. Smith for Algoma Steel corp.	Sept. 25 1940	Pr, Samp	Donated	SSMP-Vileneuve-02
Striker	Author Joseph Daley	July 17 1943	Pr, Samp	Donated	SSMP- Striker-02
Multiple Twps.	A. Lionel, A. Laframboise	1966	Pr, Samp	Donated	SSMP-Beange-01
Nicholas	Hanna MNG C, Hecla MNG C of Can L	1978	GL	Donated	SSMP-Nichoals-03
Nicholas	Cook Estate Copper Pros	1968	GL	Donated	SSMP-Nicholas-04
Long	Hanna Co	1965	GL	Donated	SSMP-long-08
Gatashk	McCool Lake Property, Robert McGregor	1970	GL, Pr	Donated	SSMP-Gatashk-12
Beange	G.E. Parsons	1968	GL, Pr	Donated	SSMP-Beange-02
Beange	Gemico Mines, Hogg/Chandler	1975	GL, Pr	Donated	SSMP-Beange-03
Aberdeen	F.E. Hollingsworth-Stobie Mine	1960	GL, Pr	Donated	SSMP-Aberdeen-10
Aberdeen	John McComber Hanna Mn. Co.	1942	GL, Pr	Donated	SSMP-Aberdeen-11
Hughes	Author R.A. MacGregor P. Eng.	July-Oct. 2003	GL, Pr, Samp	2.26463	SSMP Hughes-06
Moen & Schembri	Troon Ventures Ltd.	Aug 24, 2002 – Aug 16, 2003	GL, GC, Samp, Str, Tr	2.26922	Moen-05 /Schembri x-ref.

Table 3. Publications received by the Sault Ste. Marie District Office in 2003.

Title	Author	Type and Year of Publication
Summary of Field Work and Other Activities, 2003	Baker, C.L., Debicki, E.J., Kelly, R.I. and Parker, J.R. (eds.)	OGS OFR 6120, 2003
Report of Activities 2002, Resident Geologist Program, Red Lake Regional Resident Geologist Report: Red Lake and Kenora Districts	Lichtblau, A., Hinz, P., Ravnaas, C., Storey, C.C., Kosloski, L. and Raoul, A.,	OGS OFR 6110, 2003
Report of Activities 2002, Resident Geologist Program, Thunder Bay North Regional Resident Geologist Report: Thunder Bay North District	Mason, J.K., White, G.D., Scott, J.F., O'Brien, M.S. and Komar, C.	OGS OFR 6111, 2003
Report of Activities 2002, Resident Geologist Program, Thunder Bay South Regional Resident Geologist Report: Thunder Bay South District	Schneiders, B.R., Scott, J.F., Smyk, M.C., Parker, D.P. and O'Brien, M.S.	OGS OFR 6112, 2003
Report of Activities 2002, Resident Geologist Program, Timmins Regional Resident Geologist Report: Timmins and Sault Ste. Marie Districts	Atkinson, B.T., Hailstone, M., Seim, G. Wm., Draper, D.M., Farrow, D. and Hope, P.	OGS OFR 6113, 2003
Report of Activities 2002, Resident Geologist Program, Kirkland Lake Regional Resident Geologist Report: Kirkland Lake and Sudbury Districts	Meyer, G., Cosec, M., Grabowski, G.P.B., Guindon, D.L., Chaloux, E.C. and Stewart, J.M.	OGS OFR 6114, 2003
Report of Activities 2002, Resident Geologist Program, Southern Ontario Regional Resident Geologist Report: Southeastern and Southwestern Districts, Mines and Minerals Information Centre and Petroleum Resources Centre	Sangster, P., McGuinty, W.J., Papertzian, V.C., Steele, K.G., Lee, C.R., Laidlaw, D.A., Barua, M., Carter, T.R. and Parkes, B.D.	OGS OFR 6115, 2003
Report of Activities 2002 Resident Geologist Program, Regional Land Use Geologist Report: Northwestern, Northeastern and Southern Ontario Regions	Debicki, R.L., Drost, A.P., Rowell, D.J. and Yule, G.R.	OGS OFR 6116, 2003
Regional Modern Alluvium Sampling Survey of the Sault Ste. Marie – Espanola corridor, Northeastern Ontario: Operation Treasure Hunt	Reid, J. L.	OGS OFR 6117, 2003
Law for Professional Engineers (third edition) - Canadian and International Perspectives	Marston, D. L.	McGraw –Hill Ryerson Limited ISBN 0-07-5552628-X; 354p. (published 1996)
Canadian Professional Engineering Practice and Ethics (second edition)	Andrews, G.C. and Kemper, J.D.	Nelson Thompson Learning ISBN 0-7747-3501-5; 492p. (published 1999)
The Law and Business Administration in Canada (ninth edition) with Study Guide	Smyth, J.E., Soberman, D.A. and Easson, A.J.	Prentice Hall, Pearson Education Canada Inc.; ISBN 0-13-017668-0; 820 p. (published in 2001)
GSC Open File Report 3228 Searching for Diamonds in Canada	LeCheminant, A.N., Richardson, D.G., DiLabio, R.N.W. and Richardson, K.A.	Natural Resources Cananda; GSC Open file 3228, 268p. (published 1996)

Table 4. Property visits completed by the Sault Ste. Marie District office 2003 (keyed to Figure 2).

Number (keyed to Fig.2)	Property/Occurrence	Location
1	Diamictite exposures and quartz pebble conglomerate, Pecors Fm with dropstones and dropstones in upper Gowganda Fm fine siltstones	Bouck and Gunterman townships and NE corner of Wells Township
2	R. Brunett, R. Morin PGE claims	Otter Township
3	Coppercorp Mine and vicinity	Ryan Township
4	East of Montreal Mining Location	Ryan Township
5	Outcropping of Aweres Formation around Upper Island Lake	Aweres Township
6	Jacobsville sandstone exposures	Whitefish Island, Sault Ste. Marie locks
7	Carl Hult Lamprophyre	Daumont Township
8	Mamainse Mine	Kincaid, Ryan townships
9	Baseline Cu Au Occurrence	Kincaid Township
10	Montreal Mining Location East side on Gimlet Creek road	Ryan Township
11	Daisy Stone outcrops along the shoreline in Kincaid Township	Ryan Township
12	Outcrop along road leading north through metasediments and the Grey Owl Lake intrusion	Tronsen, Raaflaub and Runnalls townships
13	Outcrop in the vicinity of Paterson Lake	Tronsen Township
14	Outcroppings along the south side of both Wart and Mongoose lakes	Vibert Township
15	Outcrop along the east side of Wart Lake and Old Man Lake, also Old Man Lake to Batchawana River	Vibert and Running townships
16	Garry Fluke chalcopyrite-specular hematite occurrence	Tarrbutt Township
17	Upper Island Lake, south and east side new exposures of Aweres formation along old mill road	Aweres Township

PROPERTY EXAMINATIONS

Baseline Occurrence

During the period 2002 to 2003, Sault Ste. Marie prospector D. Tortosa staked 6 claim units totaling 96 hectares in Kincaid Township to cover a copper occurrence mapped by Giblin (1969a, 1969b, 1973). The claims were staked partially covering Kincaid Location 7 and Kincaid Location 8, where surface rights are held by another individual. Tortosa spent the summer mapping and sampling the occurrence utilizing an Ontario Exploration Corporation grant to cover line cutting, sampling and logistical costs.

The property is located approximately 80 km north of Sault Ste. Marie along Highway 17. Access is by forestry roads leading eastward from the highway. The property was visited as a field trip stop during the annual Sault and District Prospectors Association field trip in June 2003 and 3 other times (1997, 1999 and 2000) previously. The final 1/2 kilometer into the showing is accessed by foot along a bush trail.

The Baseline property is transected by a north-northwest-trending normal fault with east-side down movement. This sense of movement is indicated by the offset of a QFP dyke intersected in drilling. The mineralized zone is intruded by sinuous felsite dikes that frequently accompany mineralization within the fault zone. The north-northwest-trending fault zone dips 50° to 70° to the east and hosts 6 known mineralized zones over a distance of 250 meters. Mineralization has been traced at least 75 meters down dip to the east by past diamond drilling.

Mineralization on the Baseline property has a similar character to the Coppercorp mine mineralized zone and the Mamainse Copper mine zone. One significant difference between the Baseline and the Mamainse and Coppercorp mineralized systems is the abundance of sulfides at the Baseline property. Gold values as high as 4510 ppb gold are reported by Tortosa from sampling on the laumontite zone (see Figure 4).

RECOMMENDATIONS FOR EXPLORATION

The Batchawana greenstone belt is probably one of the most accessible in the province, yet it is under-explored for gold. New forest access roads have increased access to the east end of the belt from Chapleau. New logging roads also provide access to the east side of the Eastern sub-domain of the Batchawana greenstone belt from the Whitman dam in Scriven, Schembri, Wlasy, Gapp, Way-White and Lunkie townships. New roads also access Tronsen Township from the Montreal River road crossing the CN railway line at Rand. Many of these new roads access areas delineated last year as favourable for gold mineralization (Atkinson et al. 2003). A summary of recommendations for exploration in the Sault Ste. Marie District is found in Table 5, keyed to Figure 5.

New logging roads leading north along the Chippewa river to Batchawana station are also currently being established east of Wart Lake up to Old Man Lake in Vibert Township. Traverses made in this area during the 2003 field season and roads accessing the area can be found on Figure 6. This road system also provides new exposures of the Mongoose Lake gabbroic intrusion. This intrusion needs to be evaluated for its nickel-copper and PGE potential. Significantly, this intrusion is not far from the railroad at Summit. Some testing should be done to see if bulk sampling of the intrusion would provide a suitable form of dimension stone or traprock.

Magnetite iron formations with characteristics similar to the Geraldton greenstone belt have documented gold occurrences associated with sulphidization at the Pancake Lake iron formation in Palmer Township, at Mine Lake in Davieaux Township, and on the Goulais River iron formation in Nahwegezhic and Gapp townships. Small, isolated magnetite-chert interbeds occur in several other places within the belt, northeast of Runnals Township, east of Wart Lake in Vibert Township and near the southern boundary of the mafic volcanic sequence in Schembri township. These magnetite iron formations have not been extensively evaluated for their gold potential. The Mine Pond property is an example of this type. The reader is referred to the Ontario Propsectors page at: http://www.ontarioprospectors.com/prop/gold.htm. Refer to "Mineral Property Portfolio – D. Tortosa" for more detail on the Mine Road property.

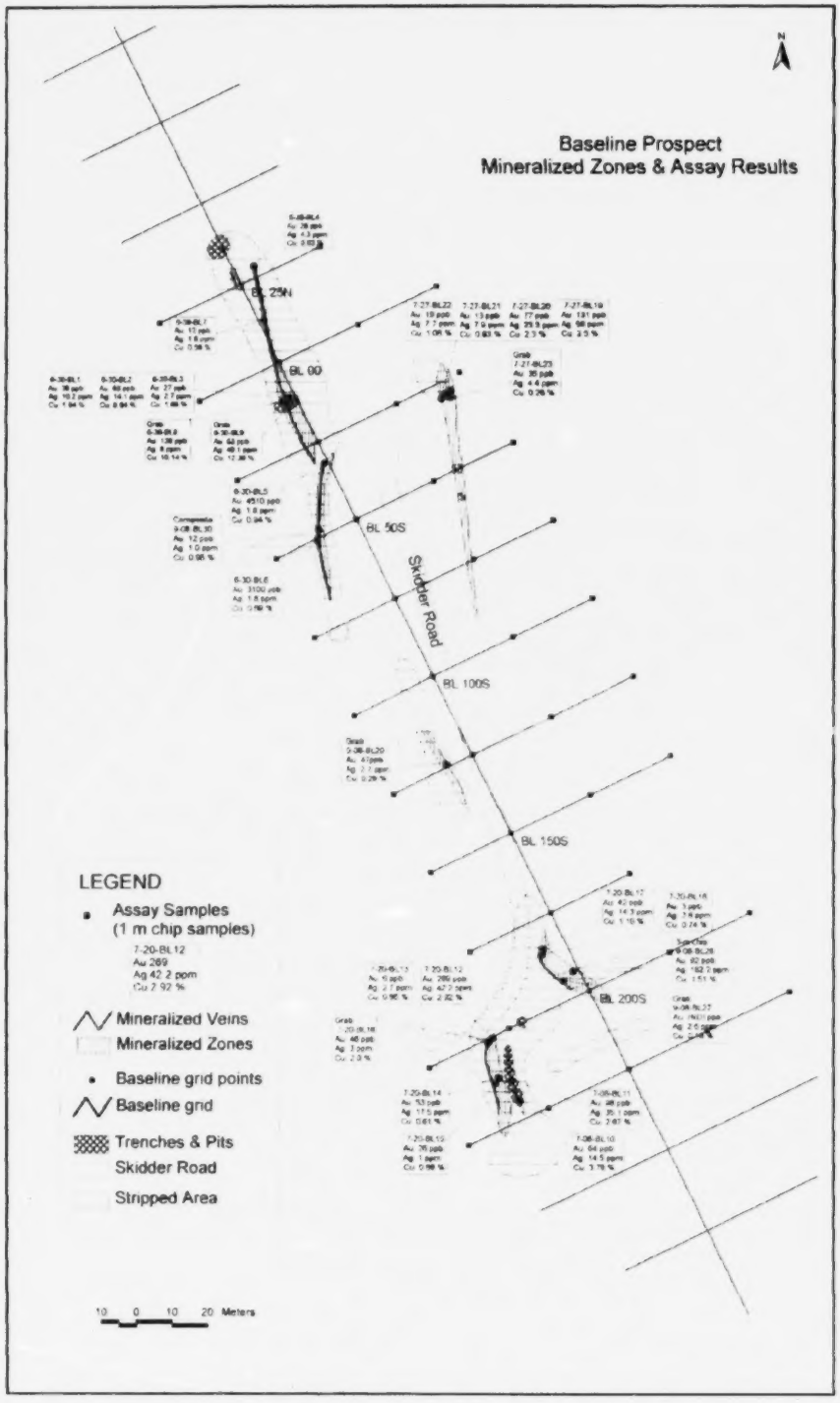

Figure 4. Mineralized zones and assays at the Baseline occurrence. *After* D. Tortosa.

Table 5. Compilation of recommendations for exploration made in past years by Resident Geologist Program staff in the Sault Ste. Marie District (keyed to Figure 5).

Author	Report of Activities (year/page)	Recommendations/Township
1. R. J. Rupert	1971, pg. 104	Kabinakagami Lake Region, 25 km north of Dubreuilville. Mafic to ultramafic intrusives riddle macro breccia zone. Anomalous titanium, chrome and abundant biotite suggest petrographic affinity with kimberlites.
2. R. J. Rupert	1973, pg. 88	NW Viel Twp. Cu prospect associated with NW trending Nipissing diabase. Glacial till cemented by 1-3" layer of malachite and traced for 1000 feet. Drilling on IP anomaly yielded values of 1.7% Cu.
3. R. J. Rupert	1973, pg. 89	Gaudette Twp. Block faulting x-cuts a heavily mineralized NE shear zone. Coarse white quartz lenses conform with the shear and contain patches of molybdenite, pyrite and chalcopyrite. This radioactive structure is favourable for Cu, Mo and Ni. Rock grabs yield 0.83% Ni and 5.38% Cu. A geochem survey contains assays high in heavy metals.
4. G. Bennet and E. J. Leahy	1979, pg. 99	Vankoughnet Twp. The argentiferous galena occurrences in the area have a high potential value which increases with Ag prices. One particular occurrence is the Prace Mine which encloses a NW striking galena vein, strongly anomalous in Ag and low alpha lead used in the electronics industry. The vein is in a shear zone, which for most of its length separates Nipissing gabbro from the laminated argillite of the Gowganda Formation.
5. G. Bennett and E.J. Leahy	1980, pg. 133 and 137	Hughes Twp. There seems to be a close spatial association between base metal-Ag occurrences and dike rocks of Keweenawan age, esp. felsite and lamprophyre. This association may be simply structural in that the deposits, namely argentiferous galena, lead, copper and zinc, occupy linear trends of N10W. The distinctive bright pink to red coloured felsite and dark inclusion-bearing lamprophyre are relatively uncommon and should be considered a plus factor in considering areas for prospecting. Please note the linear trends may not parallel the strike of the individual veins.
6. G. Bennett	1982, pg. 149 and 150	Aweres Twp. Radioactive quartz-pebble conglomerate found near or at the base of the Thessalon Formation between Sault Ste. Marie and the NE part of the Quirke Lake Syncline contain numerous anomalous Au values of up to 600 ppb. Also, in Day Twp, the same stratigraphic position returned assays of 4300 and 320 ppb Au. The magnitude and potential cannot be determined from the few analyses available so far.
7. G. Bennett, E. J. Leahy and K.D. Booth	1984, pg. 218	Davieux Twp. Evidence suggests there is a direct relationship with Au occurrence and primary magnetite presence in lean iron formation. Past drilling has returned up to 0.15 oz/ton Au and channel samples averaging 0.137 oz/ton Au along with anomalous geochem sampling.
8. G. Bennett, E.J. Leahy, K.D. Booth	1984, pg. 227	From Goulais Bay to Elliott Lake, within the Huronian Supergroup, selected outcrops have a variety of colours, textures and exhibit distinct structures. These make an attractive ornamental stone and the integrity and dimension of these outcrops remain to be measured.

Author	Report of Activities (year/page)	Recommendations/Township
9. G. Bennett, E.J. Leahy, J.P. Donald, E. Frey, J.J. Kral and D.J.J. Tortosa	1985, pg. 253	Vankoughnet Twp. While examining the area for industrial mineral potential the authors noted black granite outcrop with the dimension of 10 km x 1 km x 66 km.
10. G. Bennett, E.J. Leahy, J.P. Donald, E. Frey, J.J. Kral and D.J.J. Tortosa	1986, pg. 237	Olsen and Southern Tronsen Twp. Rampart Resources and Massive Energy carried out geochem, prospecting, mapping and drilling over pyritic iron formation. This structure traced for 5 miles in an E-W direction. Assays from drilling returned values of 4.1 ft. of 0.525 oz/ton Au and 10.1 ft. of 0.048 oz/ton Au.
11. G. Bennett, E.J. Leahy, J.P. Donald, E. Frey, J.J. Kral and D.J.J. Tortosa	1986, pg. 244	Prince Twp., Building Stone-Red Granite-Monzonite. Large deposit over 4 sq km. The deposit is homogenous, no deleterious minerals or staining and is good for building or monumental stone. Wells Twp.- Nipissing diabase-black granite is another large deposit which is homogenous and dimensions need to be measured.
12. G. Bennett, E. J. Leahy, J. Walmsley	1991, pg. 223	Hughes Twp. Mineralized breccia zone within the granite gneiss. Shear zone x-cutting consists of diabase fragments, quartz stringing and carbonate. 10-15% mineralization includes sphalerite, pyrite, galena, chalcopyrite and pyrrhotite. Cu values range from 0.05 - 4%, Zn from 1 - 13%, Pb from 1 - 7%, Ag from 1 - 2000 ppm.
13. G. Bennett, E.J. Leahy and J. Walmsley	1991, pg. 225	Fenwick Twp. Barite in dolostone associated with stratabound Cu occurring at the base of the Gordon Lake Formation. Mineralization includes vfg pyrite and specular hematite. The depositional environment is suitable for base metal concentration.
14. G. Bennett, E.J. Leahy, J. Walmsley and M. Hailstone	1992, pg. 225	Montreal Mining Location: domeykite occurrence within felsite intrusion on Hwy 17, 50 km north of Sault Ste. Marie. The copper arsenide occurs within fractures.
15. G. Bennett, E.J. Leahy, J. Walmsley and M. Hailstone	1992, pg. 230	Batchawana greenstone belt remains a prime area for mineral exploration as well as greenstone belts in Deroche, Shields and Gaudette twps.
16. G. Bennett, M. Hailstone and B. Fremlin	1994, pg. 250 and 251	Northeast corner of Ryan Twp. The Richards/Haugeneder gold occurrence is an example of gold associated with Archean hosted iron formation within the northern margins of the Batchawana greenstone belt. There are similarities to the Geraldton greenstone belt.
17. G. Bennett, M. Hailstone and B. Fremlin	1994, pg. 251	45 km north of Blind River: the Flack Lake Fault has potential for Cu mineralization. This fault is thought to be a reverse thrust on the north side of the Huronian supracrustal belt. The basalts in this structure are known to contain anomalous Cu mineralization.
18. M. Hailstone and P.Morra	1997, pg. 11	Day Township: Gold associated with basal pyritic units of the Livingston Creek Formation.

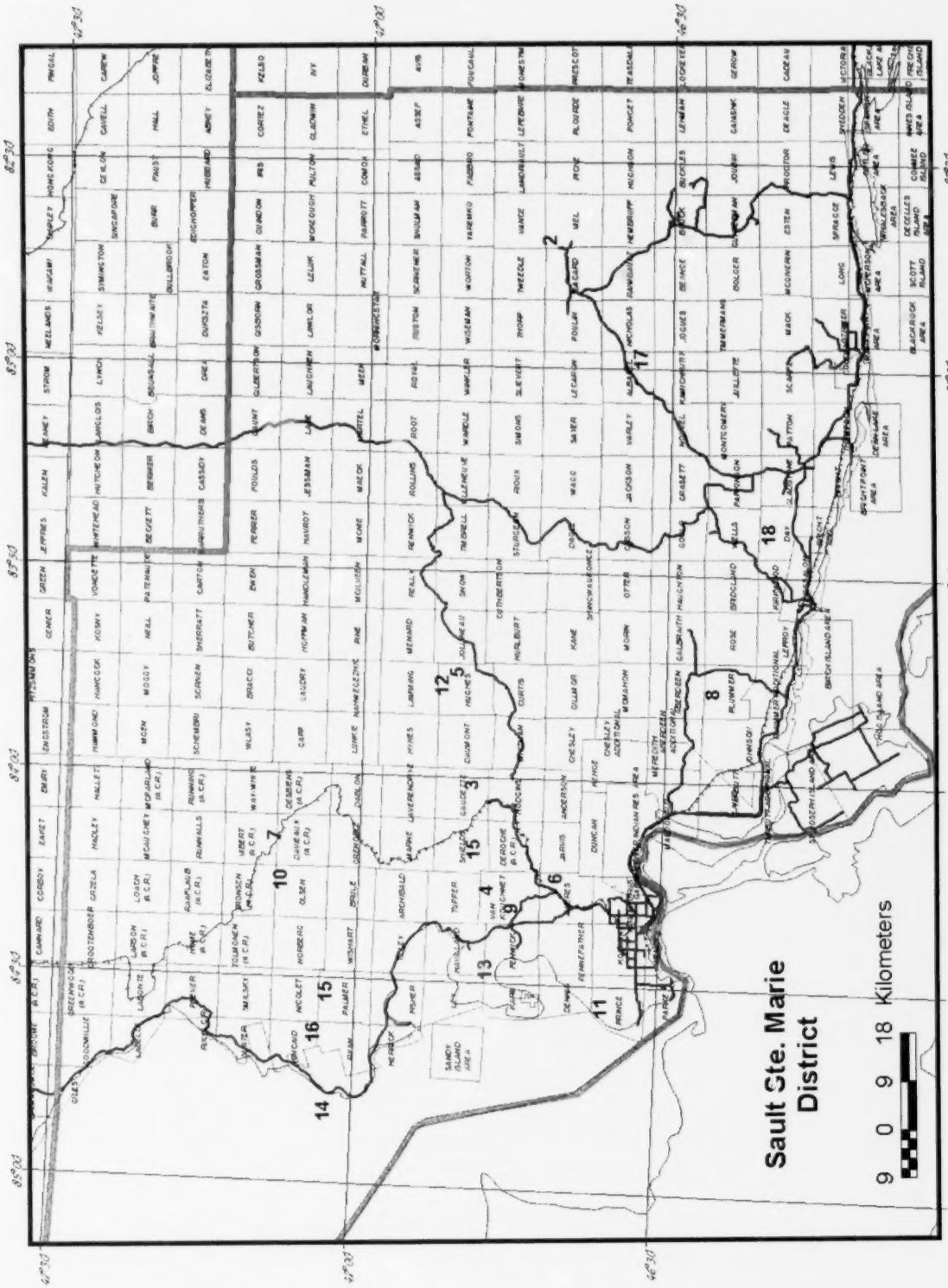

Figure 5. Recommendations for exploration locations (keyed to Table 5).

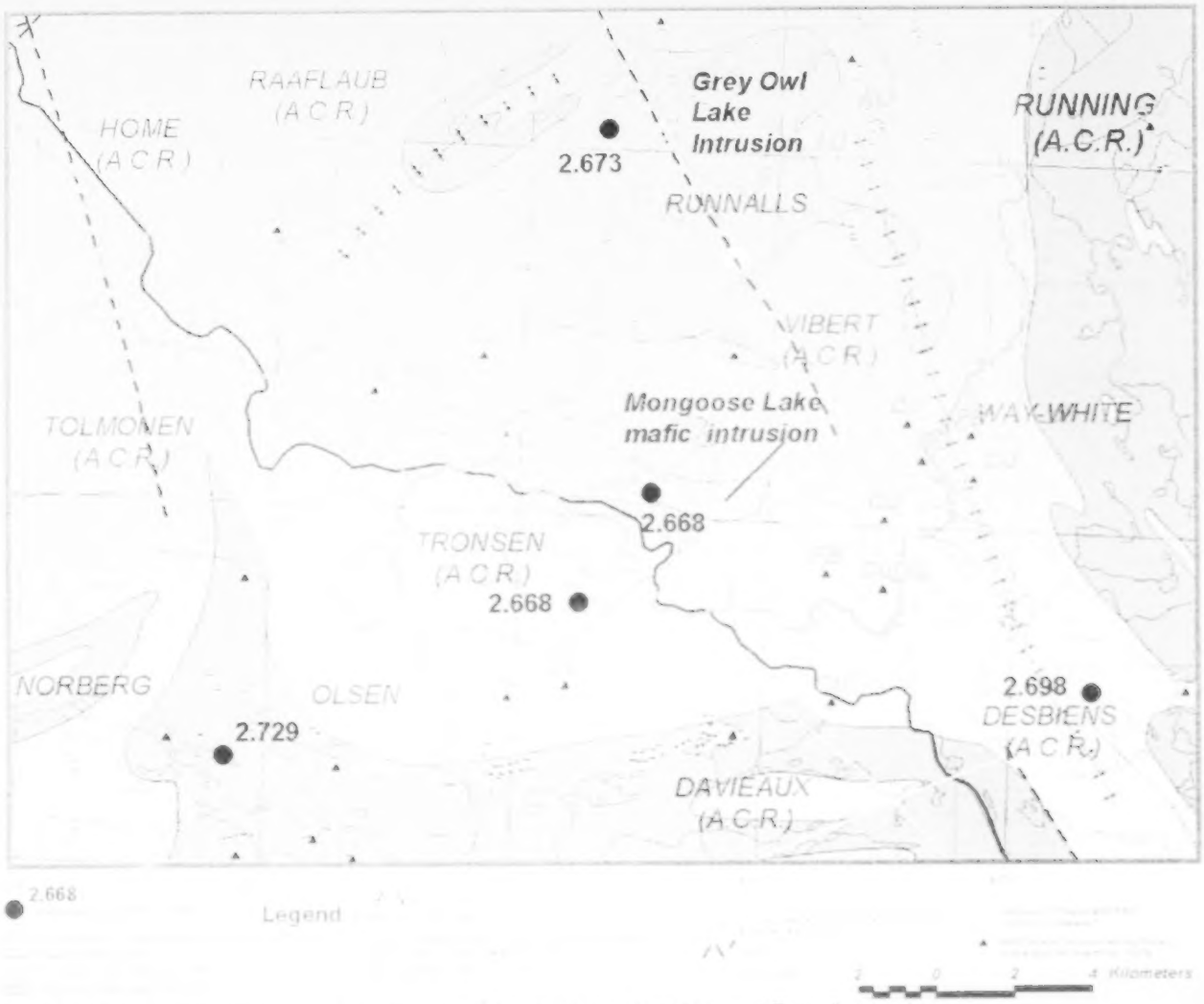

Figure 6. Roads, mineral occurrences and geology in Tronsen, Vibert, Way-White and Runnalls townships.

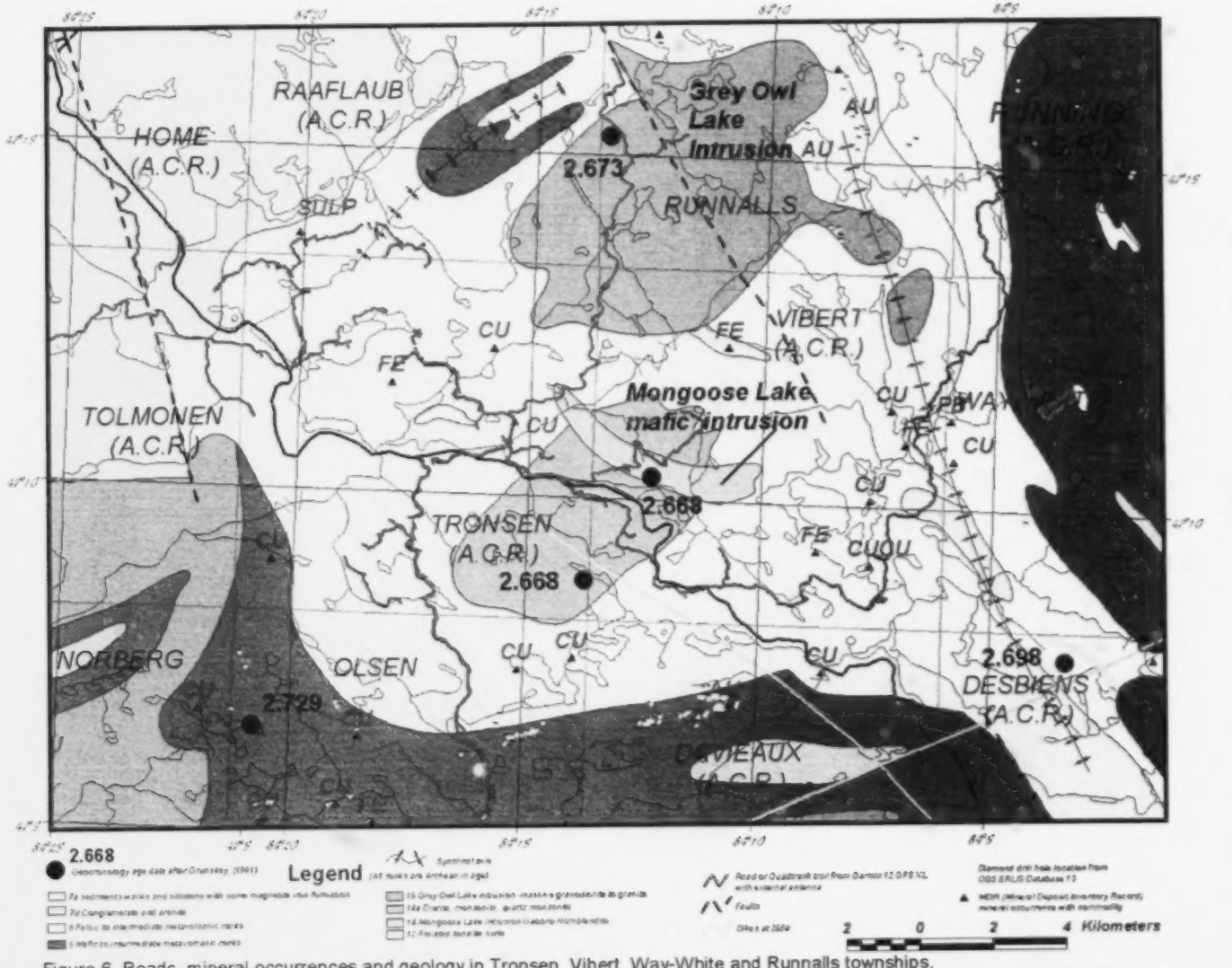

Figure 6. Roads, mineral occurrences and geology in Tronsen, Vibert, Way-White and Runnalls townships.

Table 6. Mineral deposits not being mined in the Sault Ste. Marie District in 2003.

Abbreviations

AF ..... Assessment Files
CMH ..... Canadian Mines Handbook
GR ..... Geological Report
MDC ..... Mineral Deposits Circular
MDIR ..... Mineral Deposit Inventory Record
MLS ..... Mining Lands, Sudbury
MR ..... Geological Survey Canada Publication
NM ..... The Northern Miner
OFR ..... Open File Report
PC ..... Personal Communication

Deposit Name/ NTS	Commodity	Tonnage-Grade Estimates and/or Dimensions	Ownership References	Reserve References	Status
Pater Mine Spragge Tp. 41J/2	Cu, Au, Ag	936 670 T @ 1.8% Cu	Rio Algom Limited	MR 1087	Past Producer 1969-1970
Bar-Fin Mine Thompson Tp. 41J/3	Cu	1906 - 130 foot shaft with 250 feet lateral work	Staked	MR 1087	Past Producer 1906
Bald Dome Prospect Plummer Add. Tp. 41J/5	Cu	680 388 T @ 0.25% Cu		MR 1087	Inactive
Bruce Mines Plummer Add. Tp. 41J/5	Cu, Ag	40 000 T @ 1.8% Cu above 155-foot level		MDC 12	Past Producer 1915-1921
Campbell-Dukes Prospect Plummer Add. Tp. 41J/5	Cu	33 000 T @ 1.2% Cu in 230' by 8' by 220' block		MR 223	Past Producer 1956
Rock Lake Mine Aberdeen Tp. 41J/5	Cu, Ag	1898-1903: 420 foot shaft with 3 levels and 606 lateral development		MDC 12	Past Producer 1901-1903
Havilah Mine – Ophir Mine Galbraith Tp. 41J/5	Au, Ag, Cu	1 main vein, 2 – 150 foot shafts, 1 – 183 foot adit		MDC 12	Past Producer 1892-1922
Steinberg Mine Plummer Add. Tp. 41J/5	Cu	47 000 T @ 1.82% Cu or 124 000 T @ 1.1% Cu (drill indicated)		AF	Past Producer 1906 & 1956
Stobie Mine – Rainbow Mine Johnson Tp. 41J/5	Cu, Ni, Au	9 T of ore shipped from 1 – 160 foot shaft with 20 feet of lateral workings		MDC 12	Past Producer 1899-1901
Bilton Option Patton Tp. 41J/6	Cu	453 593 T @ 1.7% Cu	N/A	MR 1087	Past Producer Pre 1956
Boyea Lake Adit and East Zones Montgomery Tp. 41IJ/6	Cu	Adit Area - 128 000 T @1.95% Cu probable & possible to 200 feet; East Area - 56 500 T @ 2.98% Cu drill indicated to 250 feet	N/A	Sudbury Contact Mines AR 1971	Past Producer Pre-1942
Crownbridge (Cannon) Prospect Kamichisitit Tp. 41J/6	Cu	415 000 T @ 1.8% Cu diluted grade	N/A	MDC 12	Past Producer 1966-1967
Glagoma Mine Gladstone Tp. 41J/6	Cu	1917 2 shafts sunk to 250 feet		MDC 12	Past Producer 1917 & 1962
Goulding Mine Cobden Tp. 41J/6	Cu	1962 816 T @ 1.4% Cu shipped from mine		MDC 12	Past Producer 1962

Deposit Name/ NTS	Commodity	Tonnage-Grade Estimates and/or Dimensions	Ownership References	Reserve References	Status
North Montgomery-Grand Portage Mine Montgomery Tp. 41J/6	Cu	147 677 T @ 1.7% Cu – Main Zone 40 9000 T @ 1.96% Cu – No 1 Zone 77 063 T @ 3.23% Cu – No 2 Zone 61 688 T @ 1% Cu – West Zone	N/A	MR 1087	Inactive
Milgate (Abbican) Prospect Nouvel Tp. 41J/6	Cu	95 934 T @ 1.08% Cu (drill indicated) A Zone L-600′ by W-10′ by D-235′		MR 1087	Inactive
Principle Strategic Minerals Prospect Gladstone Tp. 41J/6	Cu	112 300 T @ 1.54% Cu (drill indicated)		NM MDC 12	Inactive
Sheba Prospect Nouvel Tp. 41J/6	Cu	L-1000′ by W-3′ on surface @ 0.59% Cu	N/A	MDC 12	N/A
Twin Lakes Prospect Esten Tp. 41J/7	Cu	Probable - 76 900 T @ 1.73% Cu over 8.04 feet	N/A	MDC 12	
Bi-Ore Mine Sagard Tp. 41J/10	Cu	13 607 T @ 6% Cu	N/A	MR 1087	Past Producer 1947-1949
Cheney Mine Gould Tp. 41J/11	Cu	39 405 T @ 3.97% Cu (drill indicated)	N/A	MDC 12	Past Producer 1966-1967
Copper Prince Mine Kamichisitit Tp. 41J/11	Cu, Au	45 359 T @ 3% Cu 4 ore shoots near surface		MR 1087	Past Producer 1972
Jardun Mine Jarvis Tp. 41K/9	Pb, Zn, Ag, Cu, Au	49 367 T @ 4.4% Pb, 3.1% Zn, 1.42 oz/T Ag	N/A	MDC 12	Past producer 1954-1957
Kerr Scott Deroche Tp. 41K/9	Pb, Zn, Ag, Au	1859 T of hand-cobbed ore recovered. Deposit reserves have not been calculated		MDC 12	Past Producer 1939
Goulais River VanKoughnet Tp. 41K/11	Cu, Ag	250 000 T @ 2.35% Cu, 0.26 oz/T Ag in 3 zones (drill-indicated)	N/A	MR 223	Past Producer 1975 & 1981
Kristina Mine LaVerendrye Tp. 41K/11	Cu	369 350 T @ 1.95% Cu in No 4 and No. 6 shaft zones	N/A	MDC 12 MR 223	Past producer 1903-1907
Prace-Sill Lake Mine VanKoughnet Tp. 41K/16	Pb, Zn, Ag	340 T Pb, Ag concentrate produced Deposit reserves have not been calculated	N/A	PC	Past Producer 1981 & 1985-1987
Caputo-Just Wishart Tp. 41N/1	Cu	475 T @ 11.18 % Cu recovered from 3 zones		MDC 12	Past Producer 1968
Coppercorp Mine Ryan Tp. 41N/2	Cu, Ag, Au	1 360 777 T @ 1.7% Cu in C Zone 362 873 T @ 2.3% Cu in C-2 Zone 589 670 T @ 2.1% Cu in SB Zone 444 520 T @ Cu in Silver Creek Zone	N/A	MR 1087	Past Producer 1964-1972 1 M Tons recovered
Glenrock Palmer Tp. 41N/2	Co, Au, Cu	Several zones – main zone L-250′ by W-3.5′ (drill indicated)		MR 1087 MDC 12	
Jogran Prospect Ryan Tp. 41N/2	Cu, Mo	L-600′ by W- 400′ by D-680′ @ 0.053% MoS_2, 0.19% Cu (drill indicated)		MDC 12 MR 223	
Mamainse Mine Ryan Tp. 41N/2	Cu	Vein L-1500′ by W-13′ 3 shafts sunk to depth 60, 280, 1500 feet		MDC 12	Past Producer 1882-1884

Deposit Name/ NTS	Commodity	Tonnage-Grade Estimates and/or Dimensions	Ownership References	Reserve References	Status
Maricona Prospect Slater Tp. 41N/2	Cu	267 986 T @ 1.17% Cu reserves in 3 sections		MDC 12	
Pancake Lake Kincaid Tp. 41N/2	Cu	L-300' by W-21.5' by D-200' @ 0.76% Cu (drill indicated)		MR 1087	
Tribag Mine Nicolet Tp. 41N/2	Cu, W, Ag, Au	2 267 961 T @ 1.6% Cu – Breton Zone 113 397 092 T @ 0.13% Cu, 0.27% Mo – East Breccia Zone 429 688 T @ 1.6% Cu – West Breccia 929 864 T @ 2.3% Cu – H Zone 907 184 T @ 0.2% W in Tailings – H Zone	Channel I	MR 1087 MDC 12	Past Producer 1967-1973 Production from Breton & West Breccia Zones

Note: The resource estimates listed in this table do not follow the required disclosure for reserves and resources as outlined in National Instrument 43-101 and are historic resource figures generated by past workers.

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Metric Conversion Table

Conversion from SI to Imperial			Conversion from Imperial to SI		
SI Unit	*Multiplied by*	*Gives*	*Imperial Unit*	*Multiplied by*	*Gives*
		LENGTH			
1 mm	0.039 37	inches	1 inch	**25.4**	mm
1 cm	0.393 70	inches	1 inch	**2.54**	cm
1 m	3.280 84	feet	1 foot	**0.304 8**	m
1 m	0.049 709	chains	1 chain	20.116 8	m
1 km	0.621 371	miles (statute)	1 mile (statute)	**1.609 344**	km
		AREA			
1 cm^2	0.155 0	square inches	1 square inch	**6.451 6**	cm^2
1 m^2	10.763 9	square feet	1 square foot	**0.092 903 04**	m^2
1 km^2	0.386 10	square miles	1 square mile	2.589 988	km^2
1 ha	2.471 054	acres	1 acre	0.404 685 6	ha
		VOLUME			
1 cm^3	0.061 023	cubic inches	1 cubic inch	**16.387 064**	cm^3
1 m^3	35.314 7	cubic feet	1 cubic foot	0.028 316 85	m^3
1 m^3	1.307 951	cubic yards	1 cubic yard	0.764 554 86	m^3
		CAPACITY			
1 L	1.759 755	pints	1 pint	0.568 261	L
1 L	0.879 877	quarts	1 quart	1.136 522	L
1 L	0.219 969	gallons	1 gallon	**4.546 090**	L
		MASS			
1 g	0.035 273 962	ounces (avdp)	1 ounce (avdp)	28.349 523	g
1 g	0.032 150 747	ounces (troy)	1 ounce (troy)	**31.103 476 8**	g
1 kg	2.204 622 6	pounds (avdp)	1 pound (avdp)	**0.453 592 37**	kg
1 kg	0.001 102 3	tons (short)	1 ton (short)	**907.184 74**	kg
1 t	1.102 311 3	tons (short)	1 ton (short)	**0.907 184 74**	t
1 kg	0.000 984 21	tons (long)	1 ton (long)	**1016.046 908 8**	kg
1 t	0.984 206 5	tons (long)	1 ton (long)	**1.016 046 90**	t
		CONCENTRATION			
1 g/t	0.029 166 6	ounce (troy)/ ton (short)	1 ounce (troy)/ ton (short)	34.285 714 2	g/t
1 g/t	0.583 333 33	pennyweights/ ton (short)	1 pennyweight/ ton (short)	1.714 285 7	g/t

OTHER USEFUL CONVERSION FACTORS

	Multiplied by	
1 ounce (troy) per ton (short)	31.103 477	grams per ton (short)
1 gram per ton (short)	0.032 151	ounces (troy) per ton (short)
1 ounce (troy) per ton (short)	20.0	pennyweights per ton (short)
1 pennyweight per ton (short)	0.05	ounces (troy) per ton (short)

Note: Conversion factors which are in bold type are exact. The conversion factors have been taken from or have been derived from factors given in the Metric Practice Guide for the Canadian Mining and Metallurgical Industries, published by the Mining Association of Canada in co-operation with the Coal Association of Canada.

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